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Montana. Dept. of
Natural Resources
and Conservation
State forest
land management
plan

MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

STATE FOREST LAND MANAGEMENT PLAN

FINAL ENVIRONMENTAL IMPACT STATEMENT EXECUTIVE SUMMARY

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AND CONSERVATION

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EXECUTIVE SUMMARY

THE PROPOSED PLAN

The Trust Land Management Division of the Montana Department of Natural Resources and Conservation proposes to implement a State Forest Land Management Plan (Plan) to provide field personnel with consistent policy, direction, and guidance for the management of state forested lands. The Plan will apply to the forested lands portion of the total 5.2 million acres of school trust lands administered by DNRC. The forested land portion totals 662,000 acres.

The Department also proposes to adopt a list of types of actions that qualify for categorical exclusion from the preparation of an Environmental Assessment or Environmental Impact Statement, unless extraordinary circumstances occur.

SCOPE OF THE EIS

This is a programmatic plan. Several alternatives were developed as philosophies and approaches to the management of state forested lands. The selected alternative will provide policies and guidelines for managing state-owned forest lands.

The Plan will not address site-specific issues nor make specific land use allocations. It will contain the general philosophies and management standards that will provide the framework for our project-level decisions. We do not guarantee any projection of outputs, products, or services from implementation of the selected alternative, although we have created plausible scenarios (presented as ranges) as a basis for predicting environmental effects.

In accordance with MEPA rules (ARM 26.2.652(5)), the Director of DNRC will select a final alternative fifteen days after the FEIS has been transmitted to the Governor, the Environmental Quality Council and the public. The selected alternative will be made available to all interested parties in the form of a document called a Record of Decision (ROD). In addition to the required elements per MEPA (ARM 26.2.658), the ROD will include all of the elements of the selected alternative necessary for implementation (i.e., philosophy statements and resource management standards). The ROD will, in essence, become known as *the State Forest Land Management Plan.*

The selected alternative will provide a guiding framework for proposing and analyzing site-specific projects. The resulting Plan and this FEIS will be useful reference documents that will make site-specific decisions more efficient by helping us remain consistent with our overall management philosophy, and by saving needless repetition of the reasoning behind policy decisions that have already been made. However, neither the EIS nor the Plan will substitute for public involvement and proper analysis and documentation in future project-specific decisions.

SUMMARY OF CHANGES BETWEEN DEIS AND FEIS

Please note that recently the State Legislature instituted a reorganization of several state departments. As of July 1, 1995, the Department of State Lands (DBL.) was merged with the Department of Natural Resources and Conservation (DNRC). In addition, the Forest Management Bureau was transferred to the new Trust Land Management Division. The FEIS has been amended to reflect these changes.

On June 19, 1995, we released the State Forest Land Management Plan Draft Environmental Impact Statement (DEIS) to the public for review. The comment period lasted for 45 days and closed on August 4, 1995. One hundred seventy-four comments were received. In addition, testimony was recorded at public hearings held in Billings, Bozeman, Kalispell and Missoula. A

summary of the public comments and our responses are in Appendix RSP of this Final Environmental Impact Statement (FEIS).

After careful evaluation of the public comments and staff concerns an additional alternative, named Omega, was developed for consideration. Alternative Omega is a hybrid of the previously identified preferred alternatives in the DEIS: Beta, Delta and Epsilon.

This FEIS contains the original content of the DEIS, with modifications based on new information and response to comments. Several issues were identified by the public which precipitated changes, including categorical exclusions, road management and the resource management standards (RMS). We have dropped three categorical exclusions from further consideration in this Plan: timber harvest, timber stand improvement and prescribed fire. The road management standards were amended to clarify policy on road closures under each alternative. Additions and amendments were also made to other resource management standards. For instance, the Fisheries RMS were expanded to include an explanation of Recommendation #17 of the Flathead Basin Forest Practices and Fisheries Cooperative Program for the protection of bull trout and westslope cutthroat trout, as well as the Immediate Actions developed by the Governor's Bull Trout Restoration Team. The Sensitive Species and Threatened and Endangered Species RMS were modified to further clarify our policy in these areas.

Other changes, clarifications and corrections have been made to the text, including the incorporation of the Omega alternative into existing narrative, tables and figures.

LEGAL AND ADMINISTRATIVE FRAMEWORK

LEGAL

Federal lands, called trust lands, were granted to the state when Montana was admitted into the Union. Montana's Constitution requires that trust lands be managed to provide revenue to support schools. The courts have consistently upheld this requirement.

However, trust land managers have some discretion in meeting the broad trust management goal. That discretion is necessary because managers are required to not only satisfy trust principles, but also to comply with other constitutional requirements and state and federal statutes. Specifically, Montana's Constitution allows that it is within the discretion of trust land managers tomanage for long-term income, even at the expense of immediate or short-term returns.

ADMINISTRATIVE

State trust lands are legally assigned to one of four "highest and best use" categories: Forest, Grazing, Agricultural, or Other. The "Other" category includes such things as administrative sites and would not be affected by the proposed Plan. The Forest Management Bureau of the Trust Land Management Division directs the management of classified Forest lands and has assumed lead responsibility for the State Forest Land Management Plan. By agreement with the Agriculture and Grazing Management Bureau, the Forest Management Bureau is also responsible for those portions of Grazing and Agricultural lands on which forestry expertise is appropriate. The proposed Plan would address only responsibilities of the Forest Management Bureau.

Several other government agencies and landowners could be affected by implementation of the proposed Plan. For example, the Montana Department of Fish, Wildlife and Parks (MDFWP) is responsible for managing fish and wildlife populations within the state and consequently must collaborate with DNRC's management. Large private industrial forest landowners could also be affected by the proposed Plan. There could be changes in the state's policy regarding granting rights-of-way, managing cumulative environmental impacts, and otherwise coordinating with adjoining

landowners. The timber industry could be affected by changes in the timber supply from state lands.

ISSUES THAT WILL AFFECT THE SELECTION OF A FINAL ALTERNATIVE

We identified two major sets of issues that will affect selection of an alternative: (1) those raised by our own employees, and (2) those raised by the public and other agencies. The issues raised by our employees can be found in the Project Record. They include questions about Department management framework and policies, resource management and allocation, resource valuation, marketing, managing across ownerships, and categorical exclusions. Many of these questions will be answered by the Plan, while others will be answered outside the Plan, during implementation training and elsewhere.

ISSUES RAISED BY THE PUBLIC AND OTHER AGENCIES

The following thirteen issues emerged from responses to a public mailing and were affirmed by a series of public meetings.

1. ACCESS: Public concerns include the public's right to use state forest lands, the need to maintain or develop rights-of-way across private and federal ownerships, and the importance of developing permanent, legal access to all state tracts.

2. ROAD MANAGEMENT AND MAINTENANCE: The extent of forest road development has generated considerable public discussion. Road development may affect wildlife security and adversely impact water quality. However, roads are viewed by some as an asset to forest management, protection, and recreational access.

3. COORDINATION AND COOPERATION: There is general agreement that increased coordination and cooperation among adjacent landowners would be beneficial and efficient. Activities on state lands are not always compatible with adjacent landowners' management. Effects of adjacent landowners' activities may impose constraints on management activities on state lands.

4. WILDLIFE: There is increasing public sentiment to recognize the importance of wildlife values. Big game hunting contributes an increasing percentage of the state's economic base. Non-game species are an integral part of forest ecosystems. Many people place a very high value on preserving wildlife habitat, while others believe that wildlife values may be enhanced, or at least maintained, through proper management and other commodity uses.

5. WATERSHED MANAGEMENT: Many people believe that forest practices should be conducted in a manner that protects water quality. However, there is disagreement over what practices constitute an adequate level of protection.

6. WEED MANAGEMENT: The spread of noxious weeds has become an important statewide issue. DNRC must comply with weed management laws. Some people believe DNRC should share the cost of weed control and suggest that a variety of uses could share the cost of control. Others are concerned about the potential effects of using chemicals to control weeds.

7. GRAZING: Livestock grazing is a traditional use of state land that is becoming controversial. Forest grazing can impact water quality, riparian habitat, and understory vegetation. Some people believe that DNRC should manage livestock grazing more closely.

Others believe that grazing is a valuable revenue-producing use with which other less productive uses should not interfere.

8. TIMBER MANAGEMENT: There are strong sentiments both for increasing and for reducing the amount of timber to be harvested from state lands. Some argue that harvesting timber at the maximum sustainable level would optimize trust revenue. Others believe that reducing timber harvests would benefit ecosystem health and provide higher quality timber for future harvest when timber values are higher.

9. CLEARCUTTING: There is strong sentiment for minimizing or eliminating the use of clearcutting. However, some people believe clearcutting, appropriately used, is a beneficial and cost-efficient silvicultural tool.

10. ECOSYSTEM INTEGRITY: There is public concern regarding the impact of timber harvests on overall ecosystem health. Some people believe protection of old-growth forests and maintenance of natural forest characteristics should be a priority. Others believe old-growth forests are biologically unhealthy and that individual dead or dying trees should be harvested to use the resource before it is wasted.

11. TRUST MANAGEMENT POLICY: Some people believe environmental protection measures should not interfere with trust revenue production. Others believe that environmental protection must come before trust income.

12. PUBLIC INVOLVEMENT AND PLANNING: Some people believe that a sincere and aggressive public involvement effort would prevent domination by special interest and political pressures. Others believe that excessive public involvement may lead to unwise or political decisions that are contrary to DNRC's management goals and trust responsibilities.

13. RECREATIONAL OPPORTUNITIES: There is broad public interest in maintaining a variety of recreational opportunities on state land, but disagreement about the amounts and types of fees to be charged and the extent and types of activities that should be promoted.

THE ALTERNATIVES

We originally developed six alternatives through a process of internal discussion, public discussion, development of preliminary concepts, and a rigorous screening process. After release of the DEIS, a seventh alternative, Omega, was developed based on public comments and input from our staff. The narratives below explain the core concepts of each alternative. Each approach represents differing beliefs and assumptions as to the best way to meet the trust mandate.

ALPHA

This is the way we do things now, and it is the path we would continue to follow in the absence of major changes in legislative or policy direction. We would provide income to the trust by marketing a sustainable harvest of forest products while allowing other revenue-generating uses, such as grazing and cabin-site leasing, in response to applications initiated by the public.

We would meet legal and/or generally accepted standards of environmental protection. Existing standards and guidelines, and all other current plans, would remain in effect. Standards and guidelines would be modified or expanded when conditions warranted such action.

Each land office would have an annual timber sale target. Proposals for dominant land uses other than timber management would normally be initiated by the public or other

agencies. We would respond to special use proposals as we had time, but our highest priorities would be activities that supported the timber program.

This allocation of time would result in the continuation of timber management as our dominant land use, with other uses developed primarily in response to outside demand.

BETA

Under Beta, we assume that intensive management would promote healthy and productive ecosystems while yielding greater long-term income than natural processes alone would produce. We would promote an ecologically diverse, resilient, and productive forest. Managing for diversity of stand structures would provide a sustainable yield of timber and other outputs whose cumulative value would exceed that from timber alone.

Timber harvest would play the dual role of directly generating revenue, as in the past, while also serving as our primary tool for producing the desired range of stand structures and patterns. We would also use other measures to enhance environmental quality. Because diverse wildlife habitat would be supported by managing for a variety of forest conditions, we would de-emphasize standards for individual species.

Each land office would have annual goals which would include a timber sale target as well as goals for marketing other uses. Many of these goals would include the use of timber harvest as a tool. For example, forests dominated by immature second-growth timber might be thinned to produce small logs and pulpwood, reducing stand stress levels and hastening development of old-growth features and high-value forest products. In areas with considerable old-growth, some stands might be managed on long rotations to perpetuate old-growth, while others might be managed on shorter rotations to produce high yields of timber.

Our goals would be to pursue income opportunities from old-growth and other distinctive features without using timber harvest. These activities could include fee-based wildlife viewing, environmentally-friendly recreation developments, conservation easements and leases, and educational programs.

GAMMA

An underlying assumption of Gamma is that growing population and a fixed land base will cause the value of forested lands to be driven high enough that a diverse array of small annual yields from natural ecosystems will produce the greatest possible long-term average trust income. Current uncertainty in the politics of natural resource allocation makes it smarter for us to preserve the widest and richest possible array of future options, rather than maximize revenue in the short run and risk significantly limiting future options.

Under Gamma, our program direction would emphasize restoring and maintaining natural ecosystems under the assumption that we can do little to improve on nature's ability to sustain a productive and healthy ecosystem. We would expect relatively small marketable yields each year, but would expect the quality and diversity of marketable opportunities to grow rather than diminish with passing time.

In most cases, the dominant land uses would be activities that maintained or enhanced undeveloped forest conditions. Program goals might include a target income from dispersed recreation fees or leases, development of fee-access wildlife observation blinds, or timber harvest on some number of acres to simulate the effects of wildfire where fire protection had altered natural conditions.

We would emphasize activities that did not substantially change the appearance or function of the naturally occurring forest, such as hiking and wildlife watching and campgrounds that affected only small areas

while serving as a base for other activities. We would use timber harvest as a tool to approximate naturally occurring events such as fires, or to rehabilitate areas that had been altered in the past and were in poor condition. Low-impact harvesting could be used as an income source when it was clearly compatible with natural succession.

On lands that are already developed or surrounded by development to the point that restoration of natural conditions would be impractical, the dominant use would be that which best supported this philosophy.

DELTA

Under this alternative, we assume that the greatest long-term average return would come from competitively marketing our resources, focusing on flexibility, creativity, and attention to financial rate of return. Forest land management would be strongly influenced by market conditions.

We would inventory potential money-making opportunities and use financial analysis as the first indicator for initiation and timing of projects. Our decisions would balance our response to changing market conditions with maintaining technical adaptability, so that we would not abruptly drop one activity to begin another. However, we would be strongly influenced by market conditions such as cycles in demand and price for commodities or unique recreational demands. Dominant land uses could shift with changing market trends, but we would not normally make disruptive changes in response to temporary market variations. This approach would emphasize a high degree of flexibility in choosing dominant land uses.

From our inventory of potential money-making opportunities, we would list those that could be marketed and which would not have clearly unacceptable environmental impacts. Opportunities under Delta might include exclusive timber management rights for a specified term on certain blocks of our ownership; development rights on a parcel of waterfront land with high recreation potential; leasing an entire drainage with substantial low-elevation old-growth to a coalition of environmental groups; or a land exchange program designed to increase the average income-producing value of our holdings.
Lands identified for high recreation and wildlife values could be marketed by several different methods: (1) competitive bidding, (2) soliciting Requests For Proposal, (3) issuing licenses that set fees as a percentage of gross profit, or (4) leasing general recreation rights based on outside requests. We would attempt to provide resident and non-resident recreational opportunities, realizing that the highest revenue potential probably would come from developments that would attract non-residents. Other recreational opportunities on non-leased or non-licensed sites would remain available to the general public at a minimal fee.

If a particular tract did not appear to have any potential that could be readily marketed by DNRC, it could become a candidate for exchange or simply be held for the future with little or no current management. We would also conduct an active land exchange program to consolidate our holdings into blocks if we could manage them more efficiently than scattered parcels.
We would meet the minimum acceptable standards of environmental protection. In cases where the standards allowed discretion, we would accept some adverse environmental effects in order to earn larger long-term monetary returns to the school trust. In cases of uncertain environmental impacts, we would take some risk in favor of earning greater monetary return.

EPSILON

Under this program, we assume that the relative market value of timber, the existence of a manufacturing and marketing infrastructure, and our own technical expertise and long experience give us a natural advantage that makes timber management the best way to maximize long-term average trust income. Consequently,

we would formalize timber marketing as our primary business. Our main program goal would be to offer the harvest level and mix of sales most appropriate for current market conditions and long-term sustainable yield.

Other revenue-generating activities such as grazing and cabin-site leasing could be allowed in response to applications initiated by the public, as long as they did not substantially interfere with our timber marketing program. If a proposal came to us we would, as time permitted, consider its environmental impacts and revenue potential, as compared to timber harvest on the same lands. If the proposal clearly offered better long-term prospects than timber management on those lands, we would grant approval.

Lands that were not suitable for profitable timber management would either be managed for the next most profitable use that did not conflict with present or future timber harvest, be considered for exchange, or be held for the future with only minimal management.

We would meet the minimum acceptable standards of environmental protection. In cases where the standards allowed discretion, we would accept some adverse environmental effects in order to earn larger long-term monetary returns to the school trust. In cases of uncertain environmental impacts, we would take some risk in favor of earning greater monetary return.

ZETA

Under this program, we assume that changing social values, an increasing demand for quality outdoor experiences, and our status as a large forest land manager put us in a unique position to maximize long-term average trust revenue by specializing in marketing outdoor recreation and wildlife-related opportunities. Our program direction would emphasize wildlife and recreation management first and other activities only to the degree that they did not conflict with, or would enhance, these primary resource values.

We would inventory opportunities for making money through emphasizing recreation and/or wildlife management. Under this strategy, we would concentrate our efforts on initiating and actively marketing proposals that would provide income from wildlife and recreation management.

Lands identified for high recreation and wildlife values could be marketed by several methods: (1) competitive bidding; (2) soliciting Requests For Proposal; (3) issuing licenses setting fees as a percentage of gross profit; or (4) leasing recreation rights based on outside requests. We would attempt to provide resident and non-resident recreational opportunities, realizing that the highest revenue potential may come from developments that would attract non-residents. Other recreational opportunities on non-leased or non-licensed sites would remain available to the general public at a minimal fee.

Proposals from outside the agency could displace wildlife/recreation use, but their revenue potential and environmental impacts would have to be more favorable than those expected from recreation or wildlife management.

Lands that did not have marketable wildlife or recreation potential could be managed for the next most profitable use as long as doing so would not diminish wildlife or recreation opportunities for the future. Management for other uses would be handled in ways that maintained or enhanced future wildlife/recreation potential. For example, grazing leases could pay special attention to protecting riparian areas, prairie dog communities, or access roads.
We would exceed minimum environmental protection standards only when doing so would enhance wildlife and recreation economic values.

OMEGA

The Omega alternative was developed using Beta as a philosophical base and then combining elements of Beta, Delta and Epsilon. Specific issues of concern were addressed, including, managing threatened, endangered and sensitive species; implementing a management plan on scattered versus blocked state ownership; meeting landscape-level analysis objectives in a cost-effective manner; managing timber resources, including old-growth; and pursuing non-timber income opportunities.

Under this program, we assume that the best way to produce long-term income for the trust is to manage intensively for healthy and biologically diverse forests. Our understanding is that a diverse forest is a stable forest that will produce the most reliable and highest long-term revenue stream. Healthy and biologically diverse forests would provide for sustained income from both timber and a variety of other potential uses. They would also help maintain stable trust income in the face of uncertainty regarding future resource values.

We would take a 'coarse filter' approach to biodiversity by favoring an appropriate mix of stand structures and compositions on state lands. This approach supports diverse wildlife habitats. Because we cannot assure that the coarse filter approach will adequately address the full range of biodiversity, we would also employ a 'fine filter' approach for threatened, endangered and sensitive species.

In the foreseeable future, timber management would continue to be our primary source of revenue and primary tool for achieving biodiversity objectives. By promoting biodiversity, we would be protecting the future income-generating capacity of the land by maintaining or restoring healthy and productive ecosystems.

Prescribed fire will play a larger role in Omega than in any of the other alternatives. Restoration of historical forest conditions to the landscape requires that prescribed burning be among the management tools available. For centuries, fire was the predominant disturbance agent on the landscape. The last several decades have seen timber harvest replace fire as the primary disturbance agent in our forests. This has caused shifts in species compositions and the representation of various forest cover types.

Within this alternative, fire may be prescribed as an underburn treatment in some types of stands, or as a post-harvest treatment in other types. We would continue to suppress wildfire, however. The Biological Diversity Strategies for Forest Type Groups attachment (see Appendix RMS) would serve as a guideline describing situations where we may use prescribed fire.

We would pursue other income opportunities as guided by changing markets for new and traditional uses. These uses may replace timber production when their revenue exceeds long-term timber production revenue potential. Where we pursue non-timber uses, we may not comply with the biodiversity elements of this alterative. However, because we expect these other income opportunities to occur on a minor amount of the forest acreage, these uses would not compromise the overall fundamental premise of managing for biodiversity.

SUMMARY OF RESOURCE MANAGEMENT STANDARDS

We have drafted Resource Management Standards (RMS) to be applied under each

alternative. RMS were developed for Biodiversity, Silviculture, Road Management, Watershed, Fisheries, Threatened & Endangered Species, Sensitive Species, Big Game, Grazing on Classified Forest Lands and Weed Management. These standards, summarized here, take into account the alternatives' different management emphases. This summary presents the major differences between RMS as they would be applied under each alternative. The complete RMS can be found in Appendix RMS.

BIODIVERSITY RESOURCE MANAGEMENT STANDARDS

Alpha

- DNRC would normally use management practices that sustain site productivity and reduce the risk of losses due to damaging agents, which may help promote certain elements of biodiversity, but promoting biodiversity itself would not be a primary goal.
- On projects where elements of biodiversity are identified as issues, DNRC would evaluate these elements at a landscape level. These evaluations must consider all ownerships and identify opportunities to mitigate impacts while meeting project objectives.
- Where landscape evaluations identify opportunities to mitigate biodiversity impacts, DNRC may incorporate such measures into management activities if there is a known connection to long-term timber productivity, or if it would prevent significant environmental impacts.
- DNRC would not initiate cooperative ecosystem management planning with adjoining landowners, but may participate if initiated by others as long as it would promote long-term trust revenue opportunities.
- Interim old-growth standards for Stillwater, Coal Creek, and Swan River State Forests would no longer be in force upon Plan adoption.

Beta

- DNRC would promote biodiversity by favoring a variety of stand structures and patterns on state lands, thus maintaining representation of habitats for native plant and animal species.
- When land management activities are being considered, DNRC would evaluate the distribution and arrangement of stand structures at a landscape level. These evaluations would consider all ownerships and identify opportunities to promote a desirable distribution of stand structures and patterns.
- DNRC would use information from landscape evaluations to design management activities so that they will maintain or promote a favorable distribution of stand conditions. Timber harvests will be designed to promote the long-term diversity and balanced representation of forest conditions across the landscape.
- DNRC would make reasonable attempts to develop cooperative ecosystem management planning with adjoining landowners.
- We would seek to maintain and restore old-growth in at least half the amounts expected to occur on state lands with natural processes in similar types of forest.
- We would not maintain additional old-growth to compensate for its loss on adjoining ownerships, unless agreed upon in cooperative ecosystem management plans.

Gamma

- DNRC would promote biodiversity with management activities that maintain and restore natural ecological characteristics.
- When land management activities are being considered, DNRC would prepare landscape-level biodiversity plans for specific actions that would promote natural ecological characteristics that promote biodiversity.
- All management activities would be consistent with actions identified in the landscape-level biodiversity plans.
- DNRC would attempt to develop cooperative ecosystem management planning with adjoining landowners.
- DNRC would seek to maintain old-growth in amounts consistent with natural processes in similar forest types. Old-growth conditions would be developed or maintained on enough additional acres to provide for replacement of existing old-growth over time.

Delta and Epsilon

- DNRC would normally use management practices that would sustain site productivity and reduce the risk of losses due to damaging agents. Some of these practices might help promote certain elements of biodiversity; however, promoting biodiversity itself would not be a primary goal except where it provided direct trust income.
- On projects where elements of biodiversity are identified as issues, DNRC would evaluate these elements at a landscape level. These evaluations must consider all ownerships and identify opportunities to mitigate impacts while meeting project objectives.
- Where landscape evaluations identify opportunities to mitigate biodiversity impacts, DNRC may incorporate such measures if there is a known connection to trust revenue opportunities, or if trust revenue would not be diminished.
- In situations where cumulative impacts to biodiversity would limit DNRC's income-producing capability, DNRC would make reasonable attempts to develop cooperative ecosystem management plans with adjoining landowners, with the objective of promoting biodiversity at a landscape level while equitably maintaining or promoting long-term trust revenue opportunities.
- Old-growth would not be specifically protected from harvest unless the trust were compensated or protection was agreed upon as part of a cooperative ecosystem management plan.

Zeta

- DNRC would promote biodiversity where it supports income opportunities based on wildlife and recreation. Promoting biodiversity would also be a primary goal where it provides direct income by means such as conservation easements or leases, wildlife viewing areas, or nature trail development.
- On projects where elements of biodiversity are identified as issues, DNRC would evaluate these elements at an appropriate spatial scale. These evaluations would consider all ownerships and identify opportunities to mitigate impacts while meeting project objectives.
- DNRC may incorporate measures to mitigate biodiversity issues if they appear to promote or directly provide trust revenue opportunities.
- In situations where cumulative impacts to biodiversity would limit DNRC's income-producing opportunities,

we would make reasonable attempts to develop cooperative ecosystem management planning with major adjoining landowners, with the objectives of promoting biodiversity at a landscape level and equitably maintaining or promoting long-term trust revenue opportunities.

- Within an appropriate ecosystem analysis area, DNRC would seek to maintain or restore old-growth forest in amounts of at least half the average proportion that would be expected to occur with natural processes in similar forest types. Old-growth conditions would be developed or maintained on enough additional acres to provide for replacement of existing old-growth over time.
- We would not maintain additional old-growth to compensate for its loss on adjoining ownerships, unless agreed upon in cooperative ecosystem management plans.

Omega

- DNRC would promote biodiversity by taking a 'coarse filter' approach, thereby favoring an appropriate mix of stand structures and compositions on state lands. Appropriate stand structures and compositions would be based on ecological characteristics.
- The coarse filter approach supports diverse wildlife habitat by managing for a variety of forest structures and compositions, instead of focusing on habitat needs for individual, selected species. DNRC would also employ a 'fine filter' approach for T&E and sensitive species focusing on single species' habitats.
- Within areas of large, blocked ownership, DNRC would manage for a desired future condition characterized by the proportion and distribution of forest types and structures historically present on the landscape. The typical analysis area would be a third-order drainage with the focus on maintaining or restoring forest conditions that would have naturally been present given topographic, edaphic and climatic characteristics of the area. Where our ownership contains forest structures made rare on adjacent lands due to others' management activities, we would not necessarily maintain those structures in amounts sufficient to compensate for their loss when assessed over the broader landscape. However, if our ownership contained rare or unique habitat elements occurring naturally (e.g., bog, patches of a rare plant), we would manage so as to retain those elements.
- On areas of smaller and/or scattered ownership, DNRC would not frequently be in a position to provide for appropriate representation of forest conditions across the broader landscape level. DNRC activities would still be based on restoring a semblance of historic conditions within state ownership. Where our ownership contained forest structures made rare on adjacent lands due to others' management activities, we would not necessarily maintain those structures in amounts sufficient to compensate for their loss when assessed over the broader landscape. However, if our ownership contains rare or unique habitat elements occurring naturally (e.g, bog, patches of a rare plant), we would manage so as to retain those elements.

- Within an appropriate ecosystem analysis area, DNRC would seek to maintain or restore old-growth forest in amounts of at least half the average proportion that would be expected to occur with natural processes on similar sites.
- DNRC would maintain sufficient replacement old-growth to meet this goal given that old-growth does not live forever. However, DNRC would not maintain additional old-growth to compensate for loss of old-growth on adjoining ownerships.

SILVICULTURE RESOURCE MANAGEMENT STANDARDS

Alpha, Beta, Delta, Zeta and Omega

- All prescribed silvicultural treatments would maintain the long-term productivity of the soil and site to ensure long-term capability to produce trust revenue and maintain soil hydrologic function.
- Management regimes would be designed to realize the productive capability of the site to provide desired products and benefits and minimize the risk of losses to biotic or abiotic agents.
- The long-term quality of the genetic base would be maintained or improved.
- Diversity of ages, species, and structure would be maintained within or between stands in order to maintain a complex and stable ecosystem.
- Silvicultural prescriptions would be prepared for all planned treatments.
- A financial evaluation would be done for all proposed silvicultural treatments.
- All treatments would have to produce a net return higher than the net return for no action.
- All silvicultural treatment regimes would meet other RMS and comply with all appropriate statutes and regulations.

Gamma

- All prescribed silvicultural treatments would maintain the long-term productivity of the soil and site to ensure long-term capability to produce trust revenue and maintain soil hydrologic function.
- Management regimes would be designed to realize the productive capability of the site to provide desired products and benefits and minimize the risk of losses to biotic or abiotic agents.
- The long-term quality of the genetic base would be maintained or improved.
- Diversity of ages, species, and structure would be maintained within or between stands in order to maintain a complex and stable ecosystem.
- Silvicultural prescriptions would be prepared for all planned treatments.
- A financial evaluation would be done for all proposed silvicultural treatments.
- All treatments except those done specifically for ecosystem rehabilitation must produce a net return higher than the net return for no action.
- All silvicultural treatment regimes would meet other RMS and comply with all appropriate statutes and regulations.

Epsilon

- All prescribed silvicultural treatments would maintain the long-term productivity of the soil and site to ensure long-term capability to produce trust revenue and maintain soil hydrologic function.
- Management regimes would be designed to realize the productive capability of the site to provide desired products and benefits and minimize the risk of losses to biotic or abiotic agents.
- All regeneration harvest units would be reforested to prescribed stocking levels as rapidly as site conditions allow.

- The long-term quality of the genetic base would be maintained or improved.
- Diversity of ages, species, and structure would be maintained within or between stands in order to maintain a complex and stable ecosystem.
- Silvicultural prescriptions would be prepared for all planned treatments.
- A financial evaluation would be done for all proposed silvicultural treatments.
- All treatments must produce net return higher than net return for no action.
- All silvicultural treatment regimes would meet other RMS and comply with all appropriate statutes and regulations.

ROAD MANAGEMENT RESOURCE MANAGEMENT STANDARDS

Alpha

- Location, design, construction, and maintenance of all roads would be consistent with BMPs, SMZ rules, Watershed RMS, other State Land Resource Standards, and the conditions of all appropriate permits.
- Transportation planning would be conducted in the early stages of project-level planning.
- The transportation system would be planned to minimize road miles while best meeting current and future management needs.
- Outside SMZs, we would build new roads if use of existing roads would produce more undesirable impacts than new construction. Inside SMZs, we would refer to the Watershed RMS.
- We would locate and design roads to minimize maintenance needs.
- Maintenance would be adequate to ensure continued road use and resource protection.
- DNRC would determine road density at the Unit or Land Office level to meet Threatened and Endangered Species, Big Game, Sensitive Species and Biodiversity RMS, as well as road surface protection and other resource needs.
- In the Swan River State Forest, road closures would be planned in accordance with the 1994 Swan Valley Grizzly Bear Conservation Agreement.

Beta

- Location, design, construction, and maintenance of all roads would be consistent with BMPs, SMZ rules, Watershed RMS, other State Land Resource Standards, and the conditions of all appropriate permits.
- Transportation planning would be conducted as a part of comprehensive landscape-level planning.
- The transportation system would be planned to minimize road miles while best meeting current and future management needs. We would evaluate and use alternative transportation systems that do not require roads whenever possible.
- Outside SMZs, we would build new roads if use of existing roads would produce more undesirable impacts than new construction. Inside SMZs, we would refer to the Watershed RMS.
- We would locate and design roads to minimize maintenance needs.
- Maintenance would be scheduled and funded to ensure continued road use and resource protection. Drainage structures and other resource protection measures would be maintained on restricted as well as open roads.
- DNRC would plan road density to meet landscape level ecosystem plans and

other RMS. DNRC would determine road density to meet Threatened and Endangered Species, Big Game, Sensitive Species and Biodiversity RMS, as well as road surface protection and other resource needs.
- On roads which are deemed non-essential to near-term future management plans, DNRC would emphasize revegetation and slash obstruction, to minimize maintenance costs, erosion and enhance road closure and effectiveness while leaving the capital investment intact.
- In the Swan River State Forest, road closures would be planned in accordance with the 1994 Swan Valley Grizzly Bear Conservation Agreement.

Gamma

- Location, design, construction, and maintenance of all roads would be consistent with BMPs, SMZ rules, Watershed RMS, other State Land Resource Standards, and the conditions of all appropriate permits.
- Transportation planning would be conducted as a part of comprehensive landscape-level ecosystem planning.
- The transportation system would be planned to reduce current road miles, obliterate and rehabilitate unnecessary roads, and develop a more balanced transportation system that would meet current and future management needs.
- Outside SMZs, we would build new roads if use of existing roads would produce more undesirable impacts than new construction. Inside SMZs, we would refer to the Watershed RMS.
- We would locate and design roads to limit the amount of required maintenance.
- Maintenance would be scheduled and funded to ensure continued road use and resource protection. Drainage structures and other resource protection measures would be maintained on restricted as well as open roads.
- DNRC would plan road density to minimize open roads on state land. Only those roads that could be regularly maintained and that provide planned public or permanent administrative access would remain open. Threatened and Endangered Species, Big Game, Sensitive Species, and Biodiversity RMS, as well as road surface protection and other resource needs, would be used to determine which system roads should remain open.
- In the Swan River State Forest, road closures would be planned in accordance with the 1994 Swan Valley Grizzly Bear Conservation Agreement.

Delta

- Location, design, construction, and maintenance of all roads would be consistent with BMPs, SMZ rules, Watershed RMS, other State Land Resource Standards, and the conditions of all appropriate permits.
- Transportation planning would be conducted to provide for efficient access for the variety of uses proposed for each tract.
- The transportation system would be planned to minimize road miles while best meeting current and future management needs.
- Outside SMZs, we would build new roads if use of existing roads would produce more undesirable impacts than new construction. Inside SMZs, we would refer to the Watershed RMS.
- We would locate and design roads to minimize maintenance needs.
- Maintenance would be scheduled and funded to ensure continued road use

and resource protection. Drainage structures and other resource protection measures would be maintained on restricted as well as open roads.
- DNRC would determine road density to meet Threatened and Endangered Species, Big Game, Sensitive Species, and Biodiversity RMS, as well as road surface protection and other resource needs.
- In the Swan River State Forest, road closures would be planned in accordance with the 1994 Swan Valley Grizzly Bear Conservation Agreement.

Epsilon

- Location, design, construction, and maintenance of all roads would be consistent with BMPs, SMZ rules, Watershed RMS, other State Land Resource Standards, and the conditions of all appropriate permits.
- Transportation planning would be conducted in the early stages of project-level planning.
- The transportation system would be planned to minimize road miles while best meeting current and future management needs.
- Outside SMZs, we would build new roads if use of existing roads would produce more undesirable impacts than new construction. Inside SMZs, we would refer to the Watershed RMS.
- We would locate and design roads to minimize maintenance needs.
- Maintenance would be scheduled and funded to ensure continued road use and resource protection. Drainage structures and other resource protection measures would be maintained on restricted as well as open roads.
- We would plan road density to meet timber harvesting schedules. DNRC would determine maximum allowable road densities to meet Threatened and Endangered Species, Big Game, Sensitive Species, and Biodiversity RMS, as well as road surface and other resource needs.
- In the Swan River State Forest, road closures would be planned in accordance with the 1994 Swan Valley Grizzly Bear Conservation Agreement.
- The choice of roads to be opened and closed would be adjusted to facilitate timber harvesting plans.

Zeta

- Location, design, construction, and maintenance of all roads would be consistent with BMPs, SMZ rules, Watershed RMS, other State Land Resource Standards, and the conditions of all appropriate permits.
- Transportation planning would be conducted in connection with wildlife and recreational value inventories.
- The transportation system would be planned to minimize road miles, close and rehabilitate unnecessary roads, and develop a more balanced transportation system that focuses on access for recreation and wildlife management needs and objectives.
- Outside SMZs, we would build new roads if use of existing roads would produce more undesirable impacts than new construction. Inside SMZs, we would refer to the Watershed RMS.
- We would locate and design roads to minimize maintenance needs.
- We would also locate and design roads and other transportation systems to take advantage of scenic views, to properly approach wildlife areas, and to provide recreational opportunities.
- Maintenance would be scheduled and

funded to ensure continued road use and resource protection. Drainage structures and other resource protection measures would be maintained on restricted as well as open roads.
- DNRC would determine road densities to meet Threatened & Endangered Species, Big Game, Sensitive Species, and Biodiversity RMS, as well as recreational plans, road surface protection and other resource needs.
- In the Swan River State Forest, road closures would be planned in accordance with the 1994 Swan Valley Grizzly Bear Conservation Agreement.

Omega

- DNRC will only build necessary roads, that is, those needed for current and near-term management objectives, as consistent with the other resource management standards.
- We would evaluate and use alternative transportation systems that do not require roads whenever possible.
- Location, design, construction, and maintenance of all roads would be consistent with BMPs, SMZ rules, Watershed RMS, other State Land Resource Standards, and the conditions of all appropriate permits.
- Transportation planning would be conducted as a part of comprehensive landscape-level planning.
- Outside SMZs, we would build new roads if use of existing roads would produce more undesirable impacts than new construction. Inside SMZs, we would refer to the Watershed RMS.
- We would locate and design roads to minimize maintenance needs.
- Maintenance would be scheduled and funded to ensure continued road use and resource protection. Drainage structures and other resource protection measures would be maintained on restricted as well as open roads.
- DNRC would plan road density to meet landscape level ecosystem plans and other RMS. DNRC would determine road density to meet Threatened and Endangered Species, Big Game, Sensitive Species and Biodiversity RMS, as well as road surface protection and other resource needs.
- On roads which are deemed non-essential to near-term future management plans, DNRC would emphasize obliteration through revegetation and slash obstruction. This would minimize maintenance costs, erosion, enhance road closure and effectiveness while leaving the capital investment intact.
- In the Swan River State Forest, road closures would be planned in accordance with the 1994 Swan Valley Grizzly Bear Conservation Agreement.

WATERSHED RESOURCE MANAGEMENT STANDARDS

Alpha

- We would manage watersheds, soil resources, and bodies of water to maintain high water quality meeting or exceeding state water quality standards, and to protect designated beneficial uses.
- Forest management practices would incorporate BMPs into project design and implementation.
- Projects involving substantial vegetation removal or ground disturbance would require an assessment of cumulative watershed effects to ensure that the project will not increase impacts beyond the physical limits imposed by the stream ecosystem for supporting its most restrictive beneficial use.

- Threshold values for cumulative watershed effects would be set at a level to ensure protection of beneficial water uses with a low to moderate degree of risk.
- DNRC would cooperate with other landowners to manage cumulative watershed effects within prescribed thresholds.
- We would manage Streamside Management Zones (SMZs), riparian areas and wetlands in a manner that complies with appropriate laws and regulations and protects and maintains water quality and beneficial uses.
- SMZ width would depend on erosion potential, level of disturbance proposed, and beneficial uses of the stream. Maximum 100 foot wide SMZ in all but exceptional cases of steep slopes, erosive soils, and sensitive streams.
- Trees would be retained in the SMZ as prescribed in the SMZ rules.
- a 25 foot wide SMZ would be maintained around isolated wetlands greater than one-half acre.
- Existing roads in SMZs would be used if the potential water quality impacts are adequately mitigated.
- We would rehabilitate or mitigate the adverse effects of fire, flood, and other natural or management-related events as funds were available.

Beta

- We would manage watersheds, soil resources, and bodies of water to maintain high water quality meeting or exceeding state water quality standards, and to protect designated beneficial uses.
- An inventory and analysis of watershed impacts would be conducted on state-owned forest land as funding allowed, sufficient to identify causes of watershed degradation and set priorities for watershed restoration. We would emphasize mitigation to provide greater opportunities to produce trust income while maintaining beneficial uses.
- Forest management practices would incorporate BMPs into project design and implementation.
- Projects involving substantial vegetation removal or ground disturbance would require an assessment of cumulative watershed effects to ensure that the project will not increase impacts beyond the physical limits imposed by the stream ecosystem for supporting its most restrictive beneficial use.
- Threshold values for cumulative watershed effects would be set at a low to moderate degree of risk.
- DNRC would cooperate with other landowners to manage cumulative watershed effects within prescribed thresholds.
- We would manage SMZs, riparian areas and wetlands in a manner that complies with appropriate laws and regulations and protects and maintains water quality and beneficial uses.
- SMZ width would be dependent on erosion potential, level of disturbance proposed, and beneficial uses of the stream. Maximum 200 foot SMZ.
- Trees would be retained in the SMZ as prescribed in the SMZ rules.
- a 50 foot SMZ would be maintained around isolated wetlands greater than one-quarter acre.
- Existing roads in SMZs would be used if potential impacts are adequately mitigated.
- We would rehabilitate or mitigate the adverse effects of fire, flood, and other natural or management-related events as funds were available.

- For development activities, we would ensure that adequate reclamation plans and bonds are included in the approved plans of operation.
- We would locate fire management bases, camps, helibases, staging areas, and other centers for incident activities outside of the SMZ.
- We would use fire suppression methods that would result in the least soil disturbance possible in the SMZ.

Gamma

- We would manage watersheds, soil resources, and bodies of water to maintain high water quality meeting or exceeding state water quality standards, and to protect designated beneficial uses.
- An inventory and analysis of watershed impacts would be conducted on state-owned forest land as funding allowed, sufficient to identify causes of watershed degradation and set priorities for watershed restoration. We would emphasize an aggressive program of mitigation to remedy water quality impacts caused by past activities, using restoration methods that promote long-term ecological integrity of the restored ecosystem.
- Forest management practices would incorporate BMPs into project design and implementation.
- Projects involving substantial vegetation removal or ground disturbance would require an assessment of cumulative watershed effects to ensure that the project will not increase impacts beyond the physical limits imposed by the stream ecosystem for supporting its most restrictive beneficial use.
- Threshold values for cumulative watershed effects would be set at a low degree of risk.
- SMZ width would be dependent on type of waterbody.
- Fish-bearing streams would have an SMZ 300 feet of horizontal distance in width on each side.
- Permanently flowing non-fish-bearing streams would have a 150-foot wide SMZ.
- Lakes would have a 300-foot wide SMZ.
- Seasonally flowing or intermittent streams would have a 100-foot wide SMZ.
- Trees would be retained in the SMZ as prescribed in the SMZ rules.
- a 100 foot wide SMZ would be maintained around isolated wetlands greater than one-quarter acre.
- We would abandon and rehabilitate existing roads in SMZs where possible. Where there were no reasonable alternative routes, we would apply the most effective mitigation measures possible.
- We would rehabilitate or mitigate the adverse effects of fire, flood, and other natural or management-related events as funds were available.
- For development activities, we would ensure that adequate reclamation plans and bonds are included in the approved plans of operation.
- We would locate fire management bases, camps, helibases, staging areas, and other centers for incident activities outside of the SMZ.
- We would use fire suppression methods that would result in the least soil disturbance possible in the SMZ.

Delta and Epsilon

- We would manage watersheds, soil resources, and water bodies to maintain high water quality meeting or exceeding state water quality standards, and to protect designated beneficial uses.

- An inventory and analysis of watershed impacts would be conducted on state-owned forest land as funding allowed, sufficient to identify causes of watershed degradation and set priorities for watershed restoration. We would emphasize mitigation to provide greater opportunities to produce trust income.
- Forest management practices would incorporate BMPs into project design and implementation.
- Projects involving substantial vegetation removal or ground disturbance would require an assessment of cumulative watershed effects to ensure that the project will not increase impacts beyond the physical limits imposed by the stream ecosystem for supporting its most restrictive beneficial use.
- Threshold values for cumulative watershed effects would be set at a moderate to high degree of risk.
- DNRC would cooperate with other landowners to manage cumulative watershed effects within prescribed thresholds. DNRC would mitigate for other owners' current and past activities, as well as our own, only to the extent necessary to comply with requirements for water protection.
- SMZs, riparian areas, and wetlands would be managed to comply with appropriate laws and regulations and protect and maintain water quality for beneficial uses.
- SMZ width would be set according to SMZ rules, except in sensitive locations.
- Trees would be retained in the SMZ as prescribed in the SMZ rules.
- We would retain a 25-foot wide SMZ around isolated wetlands greater than one-half acre.
- Existing roads in SMZs would be used if potential impacts are adequately mitigated.
- We would rehabilitate or mitigate the adverse effects of fire, flood, and other natural or management-related events as funds were available.
- For development activities, we would ensure that adequate reclamation plans and bonds are included in the approved plans of operation.
- We would locate fire management bases, camps, helibases, staging areas, and other centers for incident activities outside of the SMZ.
- We would use fire suppression methods that would result in the least soil disturbance possible in the SMZ.

Zeta

- We would manage watersheds, soil resources, and bodies of water to maintain high water quality meeting or exceeding state water quality standards, and to protect designated beneficial uses.
- An inventory and analysis of watershed impacts would be conducted on state-owned forest land as funding allowed, sufficient to identify causes of watershed degradation and set priorities for watershed restoration. We would emphasize an aggressive program of mitigation to remedy water quality impacts caused by past activities. Rehabilitation efforts that enhance fisheries or recreation would be given priority.
- Forest management practices would incorporate BMPs into project design and implementation.
- Projects involving substantial vegetation removal or ground disturbance would require an assessment of cumulative watershed effects to ensure that the project will not increase impacts beyond the physical limits imposed by the

stream ecosystem for supporting its most restrictive beneficial use.
- Threshold values for cumulative effects would be set at a low to moderate degree of risk.
- DNRC would cooperate with other landowners to manage cumulative watershed effects within prescribed thresholds.
- SMZ width would be dependent on erosion potential, level of disturbance proposed, and beneficial uses of stream. Maximum 200-foot SMZ.
- Trees would be retained in the SMZ as prescribed in the SMZ rules.
- We would maintain a 50-foot SMZ around isolated wetlands greater than one-quarter acre.
- Existing roads in SMZs would be used if potential impacts are adequately mitigated.
- We would rehabilitate or mitigate the adverse effects of fire, flood, and other natural or management-related events as funds were available.
- For development activities, we would ensure that adequate reclamation plans and bonds are included in the approved plans of operation.
- We would locate fire management bases, camps, helibases, staging areas, and other centers for incident activities outside of the SMZ.
- We would use fire suppression methods that would result in the least soil disturbance possible in the SMZ.

Omega

- We would manage watersheds, soil resources, and bodies of water to maintain high water quality meeting or exceeding state water quality standards, and to protect designated beneficial uses.
- An inventory and analysis of watershed impacts would be conducted on state-owned forest land as funding allowed, sufficient to identify causes of watershed degradation and set priorities for watershed restoration. We would emphasize mitigation to provide greater opportunities to produce trust income while maintaining beneficial uses.
- Forest management practices would incorporate BMPs into project design and implementation.
- Projects involving substantial vegetation removal or ground disturbance would require an assessment of cumulative watershed effects to ensure that the project will not increase impacts beyond the physical limits imposed by the stream ecosystem for supporting its most restrictive beneficial use.
- Threshold values for cumulative watershed effects would be set at a low to moderate degree of risk. On the Stillwater, Coal Creek and Swan River State Forests, we would establish thresholds at a level to ensure protection of beneficial water uses with a low degree of risk.
- DNRC would cooperate with other landowners to manage cumulative watershed effects within prescribed thresholds. DNRC would continue to participate in cooperative monitoring efforts, such as the Flathead Basin Commission's Monitoring Plan.
- We would manage SMZs, riparian areas, and wetlands in a manner that complies with appropriate laws and regulations and protects and maintains water quality and beneficial uses.
- SMZ width would be dependent on erosion potential, level of disturbance proposed, and beneficial uses of the stream. Maximum 200-foot SMZ.
- Trees would be retained in the SMZ as prescribed in the SMZ rules.

- A 50-foot equipment restriction would be maintained around isolated wetlands greater than one-quarter acre.
- Existing roads in SMZs would be used if potential impacts are adequately mitigated.
- We would rehabilitate or mitigate the adverse effects of fire, flood, and other natural or management-related events as funds were available.
- For development activities, we would ensure that adequate reclamation plans and bonds are included in the approved plans of operation.
- We would locate fire management bases, camps, helibases, staging areas, and other centers for incident activities outside of the SMZ.
- We would use fire suppression methods that would result in the least soil disturbance possible in the SMZ.
- DNRC will develop a monitoring strategy to assess watershed impacts of land use activities and the effectiveness of mitigation measures.
- If monitoring indicated watershed impacts from management or other activities, problems would be corrected. The information collected would be used to identify the need for mitigation measures and modification of future activities to avoid similar impacts.
- Upon request, monitoring data will be made available to the public. DNRC will compile the results of monitoring into a report for the Land Board by October 2000 and every five years thereafter.

FISHERIES RESOURCE MANAGEMENT STANDARDS

Alpha

- DNRC would coordinate with MDFWP in design and implementation of projects that may affect the fisheries resource.
- Activities in the Flathead Basin would be designed to protect bull trout and west slope cutthroat trout habitat.
- We would minimize impacts to fisheries by implementing RMS and Best Management Practices (BMPs), and complying with the Streamside Management Zone Law and other laws and regulations.
- We would implement immediate actions as interim measures to conserve bull trout habitat, as recommended by the Governor's Bull Trout Restoration Team.

Beta, Gamma, Zeta and Omega

- DNRC would coordinate with MDFWP in design and implementation of projects that may affect the fisheries resource.
- Activities in the Flathead Basin would be designed to protect bull trout and west slope cutthroat trout habitat.
- We would manage activities outside the Flathead basin to sustain and enhance bull trout, west slope cutthroat, Yellowstone cutthroat, and all other designated "sensitive" species, and Species of Special Concern.
- We would minimize impacts to fisheries by implementing RMS and BMPs, and complying with the Streamside Management Zone Law and other laws and regulations.
- We would construct, reconstruct, and maintain road crossing structures on fish-bearing streams to provide for fish passage.
- Silvicultural treatments adjacent to fish-bearing streams would prescribe for steady entry of pool-forming trees into the stream system.
- Fisheries designated as "sensitive" or containing Species of Special Concern would be managed so as to comply with

additional, and possibly more restrictive, direction specified in the Sensitive Species RMS.
- We would cooperate with other agencies to prevent stocking of non-native fish, over-fishing and poaching.
- We would implement immediate actions as interim measures to conserve bull trout habitat, as recommended by the Governor's Bull Trout Restoration Team.

Delta and Epsilon

- DNRC would coordinate with MDFWP in design and implementation of projects that may affect the fisheries resource.
- Activities in the Flathead Basin would be designed to protect bull trout and west slope cutthroat trout habitat.
- We would minimize impacts to fisheries by implementing RMS and BMPs, and complying with the Streamside Management Zone Law and other laws and regulations.
- We would construct and maintain road crossing structures on fish-bearing streams to provide for fish passage.
- Fisheries designated as "sensitive" or containing Species of Special Concern would be managed so as to comply with additional, and possibly more restrictive, direction specified in the Sensitive Species RMS.
- We would implement immediate actions as interim measures to conserve bull trout habitat, as recommended by the Governor's Bull Trout Restoration Team.

THREATENED AND ENDANGERED SPECIES RESOURCE MANAGEMENT STANDARDS

Alpha

- DNRC would implement its 1988 grizzly bear management standards and guidelines for the west side of the Northern Continental divide, or updates of those standards.
- DNRC would participate on interagency working groups to develop guidelines and implement recovery plans for grizzly bear, bald eagle and wolf (there are no working groups for Peregrine falcons).
- We might modify activities to promote recovery of T&E plant and animal species, when consistent with producing revenue through sustained harvest of forest products. We would comply with Section 9 of the Endangered Species Act, which prohibits any action that may be considered a "taking," but would not unilaterally promote recovery.
- In the Swan River State Forest, DNRC would adhere to the set of management guidelines contained in the 1994 Swan Valley Grizzly Bear Conservation Agreement.

Beta

- DNRC would implement federal and working group standards, or DNRC standards of equivalent conservation effect, for grizzly bear management.
- DNRC would participate on interagency working groups to develop guidelines and implement recovery plans for grizzly bear, bald eagle and wolf (there are no working groups for Peregrine falcons).
- DNRC would promote recovery of threatened and endangered plant and animal species.
- In the Swan River State Forest, DNRC would adhere to the set of management guidelines contained in the 1994 Swan Valley Grizzly Bear Conservation Agreement.

Gamma

- DNRC would promote recovery of grizzly bears on state lands. We would adopt and implement federal and working group standards and guidelines for grizzly bear management on state lands in each designated recovery area.
- DNRC would participate on interagency working groups to develop guidelines and implement recovery plans for grizzly bear, bald eagle and wolf (there are no working groups for Peregrine falcons).
- We would promote recovery of all threatened and endangered plant and animal species.
- In the Swan River State Forest, DNRC would adhere to the set of management guidelines contained in the 1994 Swan Valley Grizzly Bear Conservation Agreement.

Delta and Epsilon

- DNRC would no longer implement the 1988 DNRC interim grizzly bear management standards and guidelines for the west side of the Northern Continental Divide.
- DNRC would review information from interagency working groups established to develop guidelines and implement recovery plans for T&E plant and animal species.
- DNRC would comply with Section 9 of the Endangered Species Act, which prohibits actions that may be considered a "taking."
- DNRC would not routinely implement federal and working group guidelines to promote recovery of threatened and endangered species.
- In the Swan River State Forest, DNRC would adhere to the set of management guidelines contained in the 1994 Swan Valley Grizzly Bear Conservation Agreement.

Zeta

- DNRC would either adopt and implement federal and working group standards and guidelines for grizzly bear management or develop its own standards, to the extent that doing so would not conflict with trust management policy.
- We would participate on interagency working groups to develop guidelines and implement recovery plans for grizzly bear, bald eagle and wolf (there are no working groups for Peregrine falcons).
- DNRC might modify activities to promote recovery of T&E plant and animal species when doing so is consistent with producing trust revenue. We would comply with Section 9 of the Endangered Species Act, which prohibits any actions that may be considered a "taking," but we would not unilaterally promote recovery.
- In the Swan River State Forest, DNRC would adhere to the set of management guidelines contained in the 1994 Swan Valley Grizzly Bear Conservation Agreement.

Omega

- DNRC would participate in recovery efforts of T&E plant and animal species and would confer with the U.S. Fish and Wildlife Service (USFWS) to develop habitat mitigation measures. These measures might differ from federal management guidelines as DNRC plays a subsidiary role to federal agencies in species recovery.

- We would participate on interagency working groups to develop guidelines and implement recovery plans for grizzly bear, bald eagle and wolf (there are no working groups for Peregrine falcons).
- In the Swan River State Forest, DNRC would adhere to the set of management guidelines contained in the 1994 Swan Valley Grizzly Bear Conservation Agreement.

SENSITIVE SPECIES RESOURCE MANAGEMENT STANDARDS

Alpha, Delta, Epsilon, and Zeta

- DNRC would consider sensitive species in project planning through the MEPA process. Sensitive species and their habitats identified in the project area would be given consideration during project planning in an attempt to mitigate potential adverse impacts.
- Measures to protect sensitive species would be implemented if they could be reconciled with other management goals.
- Where management of sensitive species is deemed compatible with other management goals, we would maintain important site characteristics so long as this would not substantially reduce trust revenue.
- Field surveys by qualified professionals might be required in project areas where sensitive plant species could be impacted by project actions.

Beta and Gamma

- DNRC would manage to support and where appropriate enhance populations of sensitive species on state land.
- Sensitive species and their habitats identified in the project area would be conserved.
- Appropriate measures would be taken to ensure adequate conditions to support these species or contribute to their habitats.
- Field surveys by qualified specialists would be required to determine the presence and location of sensitive plant species. Existing site conditions that could affect the continued maintenance of local populations would be documented.

Omega

- DNRC would manage so as to generally support populations of sensitive species on state land.
- For sensitive plant species, important sites and/or site characteristics would be protected.
- For sensitive animal species, DNRC would provide habitat characteristics recognized as suitable for individuals to survive and reproduce in situations where land ownership patterns and the underlying biological and geographical conditions allow for them.
- Periodic field surveys by qualified specialists would be conducted to assess how well management actions have provided for site conditions needed to support sensitive plant species.

BIG GAME RESOURCE MANAGEMENT STANDARDS

Alpha

- DNRC would manage big game habitats as a potential source of income to the school trust. To accomplish this, DNRC would keep winter ranges and all other seasonally important big game habitats in a condition capable of supporting big game populations, unless such measures were not compatible with annual program objectives.

- We would implement the elk and white-tailed deer winter range standards and guidelines drafted in November 1989.
- DNRC would consult with MDFWP to determine if seasonally important big game habitat exists within each proposed project area and, if so, to determine which habitat values might be affected by the proposed action.
- More detailed analysis would be necessary if MDFWP determines that a proposed action might conflict with management of big game habitat. When big game needs are not compatible with other management objectives, conflicts would be addressed on a case-by-case basis.

Beta and Gamma

- DNRC would promote a diversity of stand structures and landscape patterns and rely on them to provide good habitat for native wildlife populations.
- Big game habitat needs would be a secondary consideration in management decisions. However, measures to mitigate potential impacts would be implemented if they were consistent with overall management objectives, and with the Biodiversity RMS.
- The current elk and white-tailed deer management standards and guidelines drafted in November 1989 would no longer be adopted as Department policy.
- DNRC would consult with MDFWP to determine which big game habitat values are most likely to be affected by proposed management actions.

Delta

- DNRC would manage aggressively to produce revenue from available forest resources.
- On some lands, management of big game species would represent the best way to maximize trust income. Habitat manipulations would be designed to maintain or improve current and future revenue opportunities from fee-based hunting, wildlife viewing, conservation leases or easements to interested parties.
- Big game habitat needs would be given low priority in situations where revenue potential is greater from management of other resources. Mitigation measures would be implemented to ensure that big game species and their essential habitats are likely to remain in each third-order watershed following any proposed DNRC action.
- The current elk and white-tailed deer management standards and guidelines drafted in November 1989 would no longer be adopted as Department policy.
- DNRC would consult with MDFWP to determine which big game habitat values are most likely to be affected by proposed management actions.

Epsilon

- DNRC would manage forest lands to produce trust income through a sustained annual timber sale level, while attempting to incorporate big game habitat needs consistent with primary timber management objectives.
- DNRC would keep winter ranges and other seasonal ranges in a condition capable of supporting big game populations, unless this is not compatible with timber harvest objectives.
- DNRC would implement the elk and white-tailed deer management standards and guidelines drafted in November 1989 where they are compatible with timber management goals.

- DNRC would consult with the MDFWP to determine if seasonally important big game habitat exists within each proposed project area and, if so, to determine which habitat values might be affected by the proposed action.
- DNRC would consult with MDFWP to determine if important big game habitat exists within each proposed timber sale. Mitigation measures would be implemented to ensure that big game species and their essential habitats are likely to remain in each third-order watershed following any proposed DNRC action.

Zeta

- DNRC would emphasize revenue production from recreational development and wildlife management.
- Big game habitat needs would be secondary where revenue potential from management of other resources is clearly higher. When managing other resources, wildlife mitigation measures would be designed to maintain at least 50-60 percent of the potential wildlife habitat value.
- The current elk and white-tailed deer management standards and guidelines drafted in November 1989 would no longer be adopted as Department policy.
- DNRC would consult with MDFWP to determine how best to enhance big game and other wildlife habitat values in situations where big game management is a priority. In areas managed for other resources, consultations with wildlife biologists would be used to develop appropriate mitigation measures.

Omega

- DNRC would promote a diversity of stand structures and landscape patterns, and rely on them to provide good habitat for native wildlife populations.
- To the extent possible, DNRC would manage to provide for big game habitat. Measures to mitigate potential impacts would be implemented if they were consistent with overall management objectives, and with the Biodiversity RMS.
- The current elk and white-tailed deer management standards and guidelines drafted in November 1989 would no longer be adopted as Department policy.
- DNRC would consult with MDFWP to determine which big game habitat values are most likely to be affected by proposed management actions and would cooperate with MDFWP to limit detrimental impacts to big game.

CLASSIFIED FOREST LAND GRAZING RESOURCE MANAGEMENT STANDARDS

Alpha

- Grazing licenses would indicate the number of Animal Unit Months (AUMs) and grazing period of use. Grazing leases would specify AUMs only.
- Lessees and licensees would have primary responsibility for developing and maintaining rangeland improvements, and for maintaining or improving range condition.
- Stocking rates would be estimated by visual assessment of existing vegetative plant species composition.
- Riparian management concerns would be considered only in isolated instances, primarily in conjunction with mixed ownership allotments.

Beta and Omega

- Grazing licenses and leases would specify AUMs, kinds of livestock, and period of use. Lease/license stipulations would be set at the time of renewal.
- Lessees and licensees would have primary responsibility for developing and maintaining rangeland improvements and for maintaining or improving range condition.
- DNRC would support rangeland improvements through technical and financial assistance as workload and budget allow.
- Stocking rates would be estimated by visual assessment of existing vegetative plant species composition.
- Livestock management practices would be designed to prevent damage to streambanks that results in non-point source pollution.
- Mineral, protein, and other supplements would be placed to maximize animal distribution away from riparian areas. Holding facilities would be placed outside of riparian areas.
- Continuous, season-long grazing would be authorized, with the level of forage utilization not to exceed 60 percent and healthy riparian function maintained.

Gamma

- Grazing licenses and leases would specify AUMs, kinds of livestock, and period of use. Lease/license stipulations would be set at the time of renewal.
- Lessees and licensees would have primary responsibility for developing and maintaining rangeland improvements and for maintaining or improving range condition.
- DNRC would support rangeland improvements through technical and financial assistance as workload and budget allow.
- Stocking rates would be estimated by visual assessment of existing vegetative plant species composition.
- Livestock management practices would be designed to prevent damage to streambanks that results in non-point source pollution.
- Mineral, protein, and other supplements would be placed to maximize animal distribution away from riparian areas. Holding facilities would be placed outside of riparian areas.
- Continuous season-long grazing would not be allowed.

Delta and Epsilon

- Grazing licenses and leases would specify AUMs and period of use. Lease/license stipulations would be set at the time of renewal.
- Lessees and licensees would have primary responsibility for developing and maintaining rangeland improvements and for maintaining or improving range condition.
- DNRC would support rangeland improvements through technical assistance as workload and budget allow.
- Stocking rates would be estimated by visual assessment of existing vegetative plant species composition.
- Livestock management practices would be designed to prevent damage to streambanks that results in non-point source pollution.
- Mineral, protein, and other supplements would be placed to maximize animal distribution away from riparian areas. Holding facilities would be placed outside of riparian areas.
- Season-long grazing would be authorized when it has been demonstrated to be

consistent with achieving properly functioning range condition, including healthy riparian areas.

Zeta

- Grazing licenses and leases would specify AUMs, kinds of livestock, and grazing period of use. Lease/license stipulations would be set at the time of renewal.
- Lessees and licensees would have primary responsibility for developing and maintaining rangeland improvements and for maintaining or improving range condition.
- DNRC would support rangeland improvements through technical and financial assistance as workload and budget allow.
- Stocking rates would be estimated by visual assessment of existing vegetative plant species composition.
- Livestock management practices would be designed to prevent damage to streambanks that results in non-point source pollution.
- Mineral, protein, and other supplements would be placed to maximize animal distribution away from riparian areas. Holding facilities would be placed outside of riparian areas.
- Season-long grazing would be authorized with the level of forage utilization not to exceed 30 percent.

NOXIOUS WEEDS RESOURCE MANAGEMENT STANDARDS

Alpha

- Forested state lands would be managed to prevent or control the spread of noxious weeds. We would comply with weed management laws, through revegetation plans and agreements with county weed boards.
- DNRC would submit revegetation plans to county weed boards for their review of land-disturbing projects such as road construction.
- DNRC would cooperate with weed districts for control projects across ownerships.
- We would promote the prevention of weed spread by requiring measures such as cleaning heavy equipment, prompt revegetation of roads, and reducing ground disturbance.
- Stipulations and control measures to prevent the spread of weeds would be included in timber sale contracts.
- Herbicide treatments would be limited to areas where they offer the most cost-effective means of control and funds are available. New outbreaks would have first priority for control. Management of large areas of infestation may be limited to perimeter containment.
- On unleased/unlicensed state lands, DNRC would be responsible for weed control.
- A lessee or licensee of state land would be responsible for weed control on the leased/licensed land at his cost, and must comply with the Montana County Weed Management Act.
- All right-of-way agreements would require the permittee to control weed problems along the right-of-way.
- A portion of recreational access fees would be used, as available, for weed control on sites where weeds are introduced by recreation use.

Beta, Zeta and Omega

- Forested state lands would be managed to prevent or control the spread of noxious weeds. We would comply with weed management laws by inventorying noxious weed occurrences, developing management plans, and allocating funds

for weed control projects.
- DNRC would submit revegetation plans to county weed boards for their review of land-disturbing projects such as road construction. We would promptly revegetate with site-adapted grasses that emphasize native species.
- DNRC would cooperate with weed districts for control projects across ownerships.
- We would use an integrated pest management approach.
- We would promote the prevention of weed spread by requiring measures such as use of weed-free equipment, prompt revegetation of roads, and reducing ground disturbance.
- Stipulations and control measures to prevent the spread of weeds would be included in timber sale contracts. Where stipulated, weed control efforts would continue for two years following land disturbance.
- Herbicide treatments would be limited to areas where they offer the most cost-effective means of control and where biological and mechanical control measures are ineffective. New outbreaks and locations where native plant communities are threatened would have first priority for control. Management of large areas of infestation may be limited to perimeter containment.
- On unleased/unlicensed state lands, DNRC would be responsible for weed control.
- A lessee or licensee of state land would be responsible for weed control on the leased/licensed land at his cost, and must comply with the Montana County Weed Management Act.
- All right-of-way agreements would require the permittee to control weed problems along the right-of-way.
- A portion of recreational access fees would be used, as available, for weed control on sites where weeds are introduced by recreation use.

Gamma

- Forested state lands would be managed to prevent or control the spread of noxious weeds. We would comply with weed management law by inventorying noxious weed occurrences, developing management plans, and allocating funds for weed control projects.
- DNRC would submit revegetation plans to county weed boards for their review of land-disturbing projects such as road construction. We would promptly revegetate with site-adapted grasses that emphasize native species.
- DNRC would cooperate with weed districts for control projects across ownerships.
- We would use an integrated pest management approach.
- We would promote the prevention of weed spread by requiring road construction and harvest equipment to be cleaned prior to moving equipment into a project area.
- Stipulations and control measures to prevent the spread of weeds would be included in timber sale contracts. On weed-free areas, contractors would be responsible for weed control for two years following land disturbance.
- Herbicide treatments would be very limited, to areas where they offer the most cost-effective means of control and native plant communities are threatened. Herbicide treatments would focus on narrow, site-specific applications.
- On unleased/unlicensed state lands, DNRC would be responsible for weed control.

- A lessee or licensee of state land would be responsible for weed control on the leased/licensed land at his cost, and must comply with the Montana County Weed Management Act.
- All right-of-way agreements would require the permittee to control weed problems along the right-of-way. Vehicle restrictions to reduce the spread of weeds would be integrated into road management plans and right-of-ways.
- A portion of recreational access fees would be used, as available, for weed control on sites where weeds are introduced by recreation use. If recreation use funds are not available, DNRC would supplement weed control.

Delta

- Forested state lands would be managed to prevent or control the spread of noxious weeds and improve the economic return from those lands. We would comply with weed management laws, through revegetation plans and agreements with county weed boards.
- DNRC would submit revegetation plans to county weed boards for their review of land-disturbing projects such as road construction.
- DNRC would cooperate with weed districts for control projects across ownerships.
- We would promote the prevention of weed spread by requiring road construction and harvest equipment to be cleaned prior to moving equipment into a project area.
- Stipulations and control measures to limit the spread of weeds would be attached to timber sale contracts.
- Herbicide treatments would be limited to areas where they offer the most cost-effective means of control, and where biological and mechanical control measures are less effective, and where reduced weeds and improved forage would increase income potential. New outbreaks would have first priority for control. Management of large areas of infestation may be limited to perimeter containment.
- On unleased/unlicensed state lands, DNRC would be responsible for weed control.
- A lessee or licensee of state land would be responsible for weed control on the leased/licensed land at his cost, and must comply with the Montana County Weed Management Act.
- All right-of-way agreements would require the permittee to control weed problems along the right-of-way.
- A portion of recreational access fees would be used, as available, for weed control on sites where weeds are introduced by recreation use.

Epsilon

- Forested state lands would be managed to prevent or control the spread of noxious weeds. We would comply with weed management laws, through revegetation plans and agreements with county weed boards.
- DNRC would submit revegetation plans to county weed boards for their review of land-disturbing projects such as road construction.
- DNRC would cooperate with weed districts for control projects across ownerships.
- We would promote the prevention of weed spread by requiring road construction and harvest equipment to be cleaned prior to moving equipment into a project area.
- Stipulations and control measures to limit the spread of weeds would be attached to timber sale contracts.
- Herbicide treatments would be limited to areas where they offer the most cost-effective means of control, and where biological and mechanical control

measures are less effective. New outbreaks would have first priority for control. Management of large areas of infestation may be limited to perimeter containment.

- On unleased/unlicensed state lands, DNRC would be responsible for weed control.
- A lessee or licensee of state land would be responsible for weed control on the leased/licensed land at his cost, and must comply with the Montana County Weed Management Act.
- All right-of-way agreements would require the permittee to control weed problems along the right-of-way.
- A portion of recreational access fees would be used, as available, for weed control on sites where weeds are introduced by recreation use.

SUMMARY OF ALTERNATIVES

The following table summarizes how each alternative would respond to issues raised by concerned citizens.

SUMMARY OF ALTERNATIVES BY ISSUE

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
1) PUBLIC'S RIGHT TO USE STATE LANDS Some people believe the public should have unrestricted recreational use of state lands, at no cost. Others believe that unrestricted recreational use will adversely affect lease values. The 1991 Legislature passed HB 778 authorizing general recreational use of legally accessible state lands with the purchase of a $5.00 Recreational Use License (RUL). Rules allow other recreational uses on unleased tracts, and on leased tracts with the permission of the lessee. Some people believe a fee should be charged for other recreational uses, beyond those currently defined as "general recreation."	General recreational use (currently defined as including non-commercial and non-concentrated hunting, fishing and other activities determined by the Land Board to be compatible with the use of state lands; general recreation use does not include the use of streams and rivers by the public under the stream access law provided in Title 23, Chapter 2, Part 3) would be allowed on legally accessible lands with the purchase of a Recreational Use License. Other recreational uses would be allowed free of charge on unleased lands and with the permission of the lessee on leased tracts.	General recreational use (currently defined as including non-commercial and non-concentrated hunting, fishing and other activities determined by the Land Board to be compatible with the use of state lands; general recreation use does not include the use of streams and rivers by the public under the stream access law provided in Title 23, Chapter 2, Part 3) would be allowed on legally accessible lands with the purchase of a Recreational Use License.	General recreational use (currently defined as including non-commercial and non-concentrated hunting, fishing and other activities determined by the Land Board to be compatible with the use of state lands; general recreation use does not include the use of streams and rivers by the public under the stream access law provided in Title 23, Chapter 2, Part 3) would be allowed on legally accessible lands with the purchase of a Recreational Use License.	General recreational use (currently defined as including non-commercial and non-concentrated hunting, fishing and other activities determined by the Land Board to be compatible with the use of state lands; general recreation use does not include the use of streams and rivers by the public under the stream access law provided in Title 23, Chapter 2, Part 3) would be allowed on legally accessible lands with the purchase of a Recreational Use License. Some high-valued recreational tracts would be leased for recreational uses. Public use may be restricted on those tracts. Other accessible tracts would be available for uses defined as General Recreation.	General recreational use (currently defined as including non-commercial and non-concentrated hunting, fishing and other activities determined by the Land Board to be compatible with the use of state lands; general recreation use does not include the use of streams and rivers by the public under the stream access law provided in Title 23, Chapter 2, Part 3) would be allowed on legally accessible lands with the purchase of a Recreational Use License. Other recreational uses would be allowed free of charge on unleased lands and with the permission of the lessee on leased tracts.	General recreational use (currently defined as including non-commercial and non-concentrated hunting, fishing and other activities determined by the Land Board to be compatible with the use of state lands; general recreation use does not include the use of streams and rivers by the public under the stream access law provided in Title 23, Chapter 2, Part 3) would be allowed on most legally accessible lands with the purchase of a Recreational Use License. Some high-valued recreational tracts would be leased for recreational uses. Public use may be restricted on those tracts. Other accessible tracts would be available for uses defined as General Recreation.	General recreation use (currently defined as including non-commercial and non-concentrated hunting, fishing and other activities determined by the Land Board to be compatible with the use of state lands; general recreation use does not include the use of streams and rivers by the public under the stream access law provided in Title 23, Chapter 2, Part 3) would be allowed on legally accessible lands with the purchase of a Recreational Use License.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
1B) RIGHT-OF-WAY ACROSS STATE FOREST LANDS There is general concern that the public's right to use federal lands is being eroded by restrictions imposed by surrounding land owners. Many people believe that public access across state lands to adjacent federal lands should be developed as opportunities exist. Some people also believe that access across state lands to private lands should be developed.	Proposals for rights-of-way would be considered subject to management constraints, workload and environmental review. Compatibility with our timber management program would be an important factor in approval of right-of-way requests.	Proposals for rights-of-way would be considered subject to management constraints, workload and environmental review. Compatibility with our management goals would be an important factor in approval of right-of-way requests.	Proposals for rights-of-way would be considered subject to management constraints, workload and environmental review. Maintenance of the natural ecosystem would be a primary consideration in approval of right-of-way requests.	Proposals for rights-of-way would be considered subject to management constraints, workload and environmental review. Opportunities for marketing state resources would be an important factor in approval of right-of-way requests.	Proposals for rights-of-way would be considered subject to management constraints, workload and environmental review. Compatibility with our timber management program would be an important factor in approval of right-of-way requests.	Proposals for rights-of-way would be considered subject to management constraints, economic considerations, workload and environmental review. Opportunities for generating revenue from recreation or wildlife management would be an important factor in approval of right-of-way requests.	Proposals for rights-of-way would be considered subject to management constraints, workload and environmental review. Compatibility with our management goals would be an important factor in approval of right-of-way requests.
1C) ACQUIRING ACCESS TO STATE LAND Concern has been expressed that the lack of legal access to many state tracts limits our ability to manage those tracts. Some people believe we should place a high priority on securing permanent access to all state tracts.	Access would be secured to state lands when specific projects were proposed (primarily timber sales). When possible, we would obtain permanent access to state lands.	Access would be secured to state lands when specific projects were proposed. When possible, we would obtain permanent access to state lands.	Access would be secured to state lands when specific projects were proposed. When possible, we would obtain permanent access to state lands.	We would actively pursue permanent right-of-way to all tracts that have long term management potential. Acquisition priorities would be based on expected monetary return.	We would actively pursue permanent right-of-way to all tracts that have long term timber management potential.	We would actively pursue permanent right-of-way to all state tracts with significant opportunities to generate revenue from recreation or wildlife management.	Access would be secured to state lands when specific projects were proposed. When possible, we would obtain permanent access to state lands.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
2) ROAD MANAGEMENT AND MAINTENANCE The extent of forest road development has generated considerable public discussion. Road development may affect wildlife security and adversely impact water quality. Some people view road systems as an asset to forest development, protection, and recreation access. They believe roads should remain open to motor vehicle use. Others believe that the environmental costs of road development outweigh the benefits and advocate a minimum amount of forest development.	Roads would be built as needed to support land management activities (primarily timber sales). Roads would be considered a permanent investment and would generally not be obliterated unless doing so would mitigate impacts that could otherwise limit management opportunities. We would consider seasonal and year-long closures, subject to management concerns, maintenance costs, use levels, and adjacent ownership needs. We would limit road maintenance to critical needs, and require users to perform maintenance or pay maintenance fees.	We would actively seek ways to minimize the amount of new roads needed to support management activities. We would promote cooperative road management planning among adjacent land owners as one way to minimize roads. We would consider obliterating roads that were not primary access routes. We would close most roads following use in order to minimize open road mileage, unless they provided planned public access or regular administrative access. We would begin to develop an active road maintenance program and require road users to do maintenance or pay maintenance fees.	We would actively seek ways to minimize the amount of roads needed. We would promote cooperative road management planning among adjacent land owners as one way to minimize roads. We would emphasize obliterating roads that were not primary access routes. All roads would be closed to vehicle use unless continued use was consistent with recreational needs and ecosystem integrity. Some closed roads would be developed for cross country skiing, mountain biking or hiking. We would begin to develop an active road maintenance program and require road users to do maintenance or pay maintenance fees.	Roads would be built as needed to support land management activities. Roads would be considered a permanent investment and would generally not be obliterated unless doing so would mitigate forest impacts that could otherwise limit management opportunities. We would consider seasonal and year-long closures, subject to management concerns, maintenance costs, use levels, and adjacent ownership needs. We would begin to develop an active road maintenance program and require road users to do maintenance or pay maintenance fees.	Roads would be built as needed to support timber management activities. Roads would be considered a permanent investment and would generally not be obliterated unless doing so would mitigate impacts that could otherwise limit management opportunities. Roads would not be built for other uses unless they were paid for by the proposed use and would not limit timber management. We would consider seasonal and year-long closures, subject to management concerns, maintenance costs, use levels, and adjacent ownership needs. We would begin to develop an active road maintenance program and require road users to do maintenance or pay maintenance fees.	We would build roads primarily to enhance or promote profitable recreation and wildlife management opportunities. However, we would actively seek ways to minimize roads through cooperative road planning. We would use selective road closures to maximize recreational opportunities while protecting wildlife and water quality. Closed roads could be used for recreational activities such as hiking, skiing and snowmobiling. We would begin to develop an active road maintenance program and require road users to do maintenance or pay maintenance fees.	We would only build necessary roads, that is, those needed for current and near-term management objectives, as consistent with the other resource management standards. We would promote cooperative road management planning among adjacent land owners as one way to minimize roads. We would consider obliterating roads that were not primary access routes. We would close most new roads following use in order to minimize open road mileage, unless they provided planned public access or regular administrative access. We would continue to develop an active road maintenance program and require road users to do maintenance or pay maintenance fees.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
3A) ADMINISTRATIVE COORDINATION There is general agreement that increased coordination and cooperation among adjacent landowners would be beneficial and efficient. Many people believe that DNRC should take an active role in management cooperatives such as road construction, road maintenance, weed control and fire suppression. Some people also believe DNRC should develop an active land exchange program to consolidate state lands to improve efficiency.	We would maintain our current level of cooperation with other land owners. Land exchanges would receive a low priority when allocating personnel and funds.	In addition to our current level of cooperation with other land owners, we would also attempt cooperative ecosystem management planning. We would favor land exchanges that improved our flexibility to manage for a variety of trust revenue opportunities.	In addition to our current level of cooperation with other land owners, we would also attempt cooperative ecosystem management planning. We would favor land exchanges that improved trust revenue opportunities from restoration or maintenance of natural conditions.	In addition to our current level of cooperation with other land owners, we would encourage joint marketing agreements to share development costs and increase resource values. We would favor land exchanges that led to revenue generating opportunities.	In addition to our current level of cooperation with other land owners, we would encourage joint marketing agreements to share development costs and increase resource values. We would favor land exchanges that consolidated our timber lands.	In addition to our current level of cooperation with other land owners, we would encourage joint marketing agreements to share development costs and increase resource values. We would favor land exchanges that improved our opportunities for recreational and wildlife leases.	In addition to our current level of cooperation with other land owners, we would attempt cooperative ecosystem management planning. We would be actively involved in community-based planning efforts where appropriate. We would favor land exchanges that improved our flexibility to manage for a variety of trust revenue opportunities.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
3B) CUMULATIVE ENVIRONMENTAL EFFECTS Controversy develops when the cumulative effects of activities on intermingled ownerships may need mitigation measures. Conflicts occur over which landowner should modify its activities. Some people want DNRC to mitigate for the activities of other landowners. Other people think DNRC should conduct sound management on its own ownership and not mitigate for the activities of surrounding landowners.	We would evaluate cumulative effects and in most cases mitigate for the activities of others.	We would evaluate cumulative effects and in most cases mitigate for the activities of others. However, in some cases we may accept significant individual resource impacts if the activity would result in greater overall ecosystem integrity. We would pursue ecosystem management, and other agreements with adjoining land owners to achieve mutual landscape goals.	We would evaluate cumulative effects of proposed actions and mitigate for all past, present and reasonably foreseeable future actions by all land owners in the area. We would pursue ecosystem management, and other agreements with adjoining land owners to achieve mutual landscape goals.	We would evaluate cumulative effects and pursue cooperative agreements to share the responsibility of mitigation among landowners. If cooperators would not agree to limit their activities DNRC would: 1) Mitigate the activities of others for resources that have legal protection such as T&E species or water quality. 2) In other cases, we would conduct our proportional share of the mitigation based on land ownership in the project area.	We would evaluate cumulative effects and pursue cooperative agreements to share the responsibility of mitigation among landowners. If cooperators would not agree to limit their activities DNRC would: 1) Mitigate the activities of others for resources that have legal protection such as T&E species or water quality. 2) In other cases, we would conduct our proportional share of the mitigation based on land ownership in the project area.	We would evaluate cumulative effects and pursue cooperative agreements to share the responsibility of mitigation among landowners. If cooperators would not agree to limit their activities DNRC would: 1) Mitigate the activities of others for resources that have legal protection such as T&E species or water quality. 2) In other cases, we would conduct our proportional share of the mitigation based on land ownership in the project area.	We would evaluate cumulative effects and pursue cooperative agreements to share the responsibility of mitigation among landowners. In some cases we may accept significant individual resource impacts if the activity would result in greater overall ecosystem integrity and greater long-term revenue potential. (e.g., wildlife security may be reduced to promote natural vegetation conditions) We would pursue ecosystem management, and other agreements with adjoining land owners to achieve mutual landscape goals.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
3C) CONFLICTING LAND USES Activities on state lands are not always compatible with adjacent landowners' management, particularly with the increase in residential development on private land. Adjacent land management may impose constraints on the land management activities of state land. Some people believe DNRC should take an active role to resolve these conflicts; some believe that DNRC should not conduct activities that would limit the property rights of adjacent landowners; and others believe DNRC should not modify its activities to accommodate adjacent landowners.	Generally, we would modify our proposed actions to minimize conflicts with uses on adjoining non-state lands. We would coordinate activities with adjacent landowners on a case-by-case basis. When conflicts did occur, we would consider covenants or conservation licenses as a way to compensate the trust while also accommodating adjoining land owners.	Generally, we would modify our proposed actions to minimize conflicts with uses on adjoining non-state lands. We would coordinate activities with adjacent landowners on a case-by-case basis. When conflicts did occur, we would consider covenants or conservation licenses as a way to compensate the trust while also accommodating adjoining land owners.	Generally, we would modify our proposed actions to minimize conflicts with uses on adjoining non-state lands. When conflicts did occur, we would consider covenants or conservation easements as a way to compensate the trust while also accommodating adjoining land owners. We would discourage adjoining land owners from activities that diminished natural conditions on state lands.	We would only adjust our management activities to make them compatible with adjacent land uses when doing so was in the best long-term interests of the trust. We would allow conflicting land uses when the resulting income potential was great. Covenants or conservation licenses would be considered when trust compensation was comparable to that from other marketable uses of the land in question.	We would consider adjusting our timber management activities so they are compatible with adjacent lands when doing so was in the best interests of the trust. We would allow conflicting land uses when the resulting income potential was great. Covenants or conservation licenses to compensate the trust would be considered when trust compensation was comparable to that from other marketable uses of the land in question.	We would only adjust our management activities to make them compatible with adjacent land uses when doing so was in the best interests of the trust. When conflicts did occur, we would consider recreation leases, covenants or conservation licenses as long as the trust was adequately compensated, and overall recreation and wildlife income opportunities were not diminished.	We would consider adjusting our management activities so they are compatible with adjacent lands, when doing so is consistent with the general philosophy of the alternative. We would coordinate activities with adjacent landowners case-by-case. When conflicts did occur, we would consider covenants or conservation licenses as long as the trust was adequately compensated. These covenants or licenses may not fully comply with the biodiversity elements of this alternative. However, because we expect these opportunities to occur on a minor amount of forest acreage, these uses would not compromise the overall fundamental premise of managing for biodiversity.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
4) WILDLIFE There is increasing public sentiment to recognize the importance of wildlife values. Big game hunting contributes an increasing percentage of the state's economic base. Non-game species are an integral part of forest ecosystems. Many people place a very high priority on preserving wildlife habitat, and believe that commodity production degrades habitat quality. Others believe that wildlife values may be enhanced, or at least maintained, through proper management and other commodity uses.	When considering projects, our primary wildlife emphasis would be on protection of big game habitat. When big game needs were not compatible with other management objectives, conflicts would be addressed on a case-by-case basis. We would adopt federal T&E species standards, or develop our own guidelines, to support recovery of threatened and endangered species to the extent that doing so would not conflict with our overriding trust management policy. Habitat for non-game species would only be emphasized when it became an issue on a specific project. Nominal income would be generated from wildlife management through outfitting, hunting or fishing.	When considering projects, we would manage wildlife habitats by promoting a diversity of stand structures and patterns. We would rely on this to provide good habitat for native wildlife populations. Big game habitat would be de-emphasized. We would adopt federal T&E species standards, or develop our own standards of equivalent conservation effect through consultation with U.S. Fish and Wildlife Service, to promote recovery of threatened and endangered species. Non-game species would be protected by promoting a diversity of forest conditions. Income to the trust from wildlife would be generated from outfitting, hunting, and fishing.	We would manage wildlife habitats by promoting natural ecosystem characteristics. We would emphasize habitat for plant and wildlife species such as interior forest dwelling or old-growth-dependent species that are better indicators of overall forest health than big game species. Habitat for T&E species would be managed in ways that would most likely result in species recovery. Income to the trust from wildlife would be generated from outfitting, hunting, fishing, and licensing of non-consumptive wildlife activities such as bird watching or wildlife viewing areas.	Wildlife and its habitat would be considered a resource with income potential. Management activities would be modified to provide an appropriate level of protection to wildlife habitat based on the site-specific potential for income production. Habitat for T&E species would be managed to standards that avoided violation of the Endangered Species Act. Management for non-game species would be limited to those species or sites that represent opportunities to provide income. Income to the trust from wildlife could be generated from exclusive hunting leases, general hunting and fishing, or leases and licenses protecting wildlife values.	Wildlife habitat would be considered secondary to timber management. The level of wildlife habitat protection would be reduced if protection measures would substantially detract from timber management objectives. Habitat for T&E species would be managed to standards that avoided violations of the Endangered Species Act. Nominal income to the trust would be generated from wildlife management through outfitting, and hunting or fishing.	Wildlife and its habitat would be a primary income producing resource. On suitable lands, we would design habitat manipulations to improve income opportunities. We would adopt federal T&E species standards, or develop our own guidelines, to support recovery of threatened and endangered species to the extent that doing so would not conflict with our overriding trust management policy. Non-game species would be managed to maintain viable populations and to provide a variety of recreational opportunities. Income could be generated from activities such as exclusive hunting leases or fish pond development, as well as from general recreation uses.	When considering projects, we would manage wildlife habitats by promoting a diversity of stand structures and patterns. We would rely on this to provide good habitat for native wildlife populations. To the extent possible, we would manage to provide for big game habitat We would participate in recovery efforts of T&E plant and animal species by developing and implementing habitat mitigation measures. Non-game species would be supported by promoting a diversity of forest conditions. Income to the trust from wildlife would be generated from outfitting, general hunting and fishing, or leases and licenses to protect wildlife values.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
5) WATERSHED MANAGEMENT Forest lands generally have high values as watersheds. Timber harvests, livestock grazing, road construction and other land-disturbing activities can impact these values. Many people believe that forest practices should be conducted in a manner that protects water quality. However, there is disagreement over what practices constitute an adequate level of protection. Some people believe that management practices in riparian areas should have more stringent requirements.	We would rely on Forestry Best Management Practices, State Water Quality laws, the SMZ law and our own RMS to provide watershed protection. BMPs would be minimum standards. Effectiveness & implementation of BMPs would be monitored through contract administration and on-site evaluation. Mitigation of cumulative watershed effects would be emphasized, and appropriate constraints would be applied to our activities.	We would rely on Forestry Best Management Practices, State Water Quality laws, the SMZ law and our own RMS to provide watershed protection. BMPs would be minimum standards. Effectiveness & implementation of BMPs would be monitored through contract administration and on-site evaluation. We would pursue an aggressive program of water quality rehabilitation to mitigate the effects of past activities. Mitigation of cumulative watershed effects would be emphasized and appropriate constraints would be applied to our activities. RMS would give special emphasis to protection of riparian zones.	We would adopt a standard of no net impact to sensitive watersheds and important fisheries. In most cases our practices would exceed BMPs, Water Quality laws and SMZ regulations. Effectiveness & implementation of BMPs would be monitored through contract administration and on-site evaluation. We would pursue an aggressive program of water quality rehabilitation to mitigate the effects of past activities. Mitigation of cumulative watershed effects would be emphasized, and appropriate constraints would be applied to our activities. RMS would give special emphasis to protection of riparian zones.	We would rely on Forestry Best Management Practices, State Water Quality laws, the SMZ law and our own RMS to provide watershed protection. BMPs would be minimum standards. Effectiveness and implementation of BMPs would be monitored through contract administration and on-site sale evaluation. Mitigation of cumulative watershed effects would be emphasized, and appropriate constraints would be applied to our activities. We would do watershed rehabilitation if it would increase income opportunities.	We would rely on Forestry Best Management Practices, State Water Quality laws, the SMZ law and our own RMS to provide watershed protection. BMPs would be minimum standards. Effectiveness and implementation of BMPs would be monitored through contract administration and on-site sale evaluation. Mitigation of cumulative watershed effects would be emphasized, and appropriate constraints would be applied to our activities. We would do watershed rehabilitation if it would increase timber opportunities.	We would rely on Forestry Best Management Practices, State Water Quality laws, the SMZ law and our own RMS to provide watershed protection. BMPs would be minimum standards. Effectiveness and implementation of BMPs would be monitored through contract administration and on-site sale evaluation. We would pursue an aggressive water quality and fisheries rehabilitation program to mitigate the effects of past activities in watersheds with high fisheries values. Mitigation of cumulative watershed effects would be emphasized, and appropriate constraints would be applied to our activities.	We would rely on Forestry Best Management Practices, State Water Quality laws, the SMZ law and our own RMS to provide watershed protection. Our operations would meet or exceed BMPs. Effectiveness and implementation of BMPs would be monitored through contract administration and on-site evaluation. We would emphasize mitigation of existing water quality impacts in order to minimize the effects of past activities. Mitigation of cumulative watershed effects would be emphasized and appropriate constraints would be placed on our activities. RMS would give special emphasis to the protection of riparian zones.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
6) WEED MANAGEMENT The spread of noxious weeds has become an important issue statewide. Weeds established on state lands can spread to other ownerships. Livestock use, recreational activities and logging can distribute weeds. DNRC must comply with weed management laws. Some people believe DNRC should share the cost of weed control and suggest that a variety of uses could share the cost of control. There is some concern regarding the use of chemicals to control weeds.	We would comply with weed management laws through agreements with county weed boards. Stipulations to limit weed distribution would be included in all contracts. A portion of recreational fees and forest improvement fees would be used for weed control. Users would be responsible for weed control related to their leased or licensed use. Herbicide spraying would be used as a weed control measure when appropriate.	We would take a more active approach to weed control than in the past. Stipulations to limit weed distribution would be included in all contracts. A portion of recreational fees and forest improvement fees would be used for weed control. Users would be responsible for weed control related to their leased or licensed use. Herbicide spraying would be used as an interim practice, but long range emphasis would be on integrated pest management.	We would take a more active approach to weed control than in the past. Restrictions or mitigations would be placed on most activities to prevent or control noxious weeds. A portion of fees from most uses would be dedicated to weed control programs. Users would be responsible for weed control related to their leased or licensed use. Natural and biological weed control measures would be favored. Herbicides would be used only for spot spraying of new infestations.	We would take a more active approach to weed control than in the past. Stipulations to limit weed distribution would be included in contracts. A portion of fees from most uses would be dedicated to weed control programs. Users would be responsible for weed control related to their leased or licensed use. Herbicide spraying would be used for weed control when it was the most cost effective method for protecting marketable values. However, it would be part of an integrated pest management program.	We would comply with weed management laws through agreements with the County Weed Boards. Stipulations to limit weed distribution would be included in timber sale agreements. A portion of fees from most uses would be dedicated to weed control programs. Users would be responsible for weed control related to their leased or licensed use. Herbicide spraying would be used for weed control when it was the most cost effective method for protecting marketable values. However, it would be part of an integrated pest management program.	We would comply with weed management laws through agreements with the County Weed Boards. Stipulations to limit weed distribution would be included in contracts. A portion of fees from most uses would be dedicated to weed control programs. Users would be responsible for weed control related to their leased or licensed use. Herbicide spraying would be used for weed control when its net effect was to enhance income potential from recreation and wildlife management. Our overall emphasis would be on integrated pest management.	We would take a more active approach to weed control than in the past. Stipulations for weed prevention would be included in all timber sale contracts. A portion of recreation fees and forest improvement fees would be used for weed control. We would emphasize an integrated pest management approach to weed control per HB 395. This approach would be implemented using one or a combination of weed treatments, including biological, herbicide and cultural treatments, based on overall effectiveness and cost considerations.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
7) GRAZING Livestock grazing is a traditional use that is becoming controversial. Forest grazing can impact water quality, riparian habitat and understory vegetation. Some people believe that livestock grazing should be more closely managed by DNRC. Others believe that livestock grazing is a historic and valuable revenue-producing use with which other less productive uses should not interfere. Some forested state lands are classified as principally valuable for grazing.	Lessees on forested classified grazing lands would be responsible for management, type of livestock, season of use, and animal distribution. They would be required to develop and maintain improvements. Grazing licenses, on classified forest lands, would specify AUMs, and season of use. Licenses could be modified to accommodate timber management activities. Carrying capacities would be based on potential forage production. Lease and license administration and monitoring would have low priority. We would not routinely monitor the watershed effects from livestock grazing.	Grazing leases and licenses would be more closely monitored to evaluate impacts to forest ecosystems. The condition of riparian areas would serve as a primary indicator of management impacts. Restrictions would be placed on grazing practices to promote a diverse ecosystem and protect watersheds. Lessees/licensees would be required to develop and maintain improvements. Grazing leases/licenses on classified forest lands would specify animal type, AUMs, and season of use. Leases/ licenses could be modified to accommodate other management activities.	Grazing of rangeland areas intermingled with forest would only be allowed when not damaging to plant communities, water quality and riparian zones. The condition of riparian zones would be used as a primary indicator of management impacts. Some grazing licenses could be suspended to allow range recovery and forest regeneration. Lessees/licensees would be required to develop and maintain improvements. Grazing leases/licenses on classified forest lands would specify animal type, AUMs, and season of use. Leases/ licenses could be modified to accommodate other management activities.	Livestock grazing would be promoted on sites where it was a primary income source, and suspended or restricted in areas where it would adversely affect higher income uses. The condition of riparian zones would be used as a primary indicator of management impacts. Grazing leases/licenses on classified forest lands would specify animal type, AUMs, and season of use. Leases/ licenses could be modified to accommodate other management activities.	Grazing use would be secondary to timber management. Where compatible, grazing and timber would both be managed. Grazing could be suspended/restricted in areas where it impacted timber production (i.e. regeneration sites). Riparian areas would be managed more intensely due to watershed concerns and the potential to limit timber management. The condition of riparian zones would be used as a primary indicator of management impacts. Grazing leases/ licenses on classified forest lands would specify animal type, AUMs, season of use. Leases/ licenses could be changedd to accommodate timber activities.	Forested rangeland would be managed more intensively so as to enhance wildlife and recreation income generating opportunities. Grazing leases and licenses on classified forest lands would specify animal type, AUMs, and season of use. Contracts could be modified and grazing practices could be restricted to promote wildlife values and recreational opportunities. Lessees and licensees would be required to develop and maintain improvements. The condition of riparian zones would be used as a primary indicator of management impacts.	Grazing leases and licenses would be more closely monitored to evaluate impacts to forest ecosystems. The condition of riparian areas would serve as a primary indicator of management impacts. Restrictions would be placed on grazing practices to promote a diverse ecosystem and protect watersheds. Lessees/licensees would be required to develop and maintain improvements. Grazing leases/licenses on classified forest lands would specify animal type, AUMs, and season of use. Leases/licenses could be modified to accommodate other management activities.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
8) TIMBER MANAGEMENT There are strong sentiments both for increasing and for reducing the amount of timber to be harvested from state lands. Some argue that harvesting timber at the maximum sustainable level would optimize trust revenue. They believe a steady, sustainable timber harvest from state lands is healthy for the forest. Others believe that reducing timber harvests would benefit ecosystem health, other resources and provide higher quality timber for future harvest when real timber values are much higher.	We would try to offer a steady and sustainable supply of timber from forested state lands. Constraints to our annual harvest would result from T&E species requirements, SMZs, watershed concerns and cumulative effects considerations. Salvage of dead and dying material would be pursued as market conditions and staffing allowed.	Timber would be managed both for income and as a tool to promote biological diversity. We would try to offer a steady and sustainable supply of timber from forested state lands. Salvage of dead and dying material would occur where economically feasible, only after sufficient material was retained to maintain biological diversity.	Timber harvest may be used as a tool to help restore and maintain ecosystem integrity, but we would not attempt to offer a steady timber harvest target each year. The concept of sustained yield would be modified to include ecosystem components such as fungi, rots, dead downed debris, micro-organisms and fauna. Sustainability of ecological features, processes, plant and animal species, and overall environmental quality would be emphasized, rather than a sustained supply of timber.	Timber harvest would be an important contributor to trust income, but not necessarily the primary one. We would not attempt to offer a steady annual harvest, but rather to take advantage of market conditions. When market conditions were favorable for a given product, we would offer higher volumes for sale. Lands would be managed for sustainable yield over the long term. Maximum harvests would be constrained by marketing of other forest uses; protection of watershed values, wildlife, and T&E species; and by cumulative effects. Salvage of dead and dying material would be pursued as market conditions and staffing allowed.	We would try to offer the highest sustainable annual timber supply from forested state lands. Constraints to our annual harvest would result from T&E species requirements, SMZs, watershed concerns and cumulative effects considerations. Salvage of dead and dying material would be emphasized as market conditions and staffing allowed.	Timber management would be secondary to management for wildlife and recreation. Timber harvests would be used as a tool to improve wildlife habitat or where recreational values are limited. We would not offer a steady annual supply of timber from forested state lands. Salvage of dead and dying material would be conducted where compatible with recreational needs and when economically feasible.	Timber would be managed both for income and as a tool to promote biological diversity. We would offer the highest sustainable supply of timber from forested state lands while providing for necessary biodiversity and as consistent with all other elements of this alternative. Salvage of dead and dying material would occur where economically feasible after sufficient material was retained to address biological diversity issues.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
9) CLEARCUTTING There is strong sentiment for minimizing or eliminating the use of clearcutting. Some people oppose all forms of even-aged management. They see clearcutting as a wasteful, inappropriate practice that benefits only timber production, at an unacceptable cost to other resources. Many people oppose clearcutting simply because of its appearance. Other people believe clearcutting, appropriately used, is a beneficial and cost efficient silvicultural tool. They think it would be a mistake to reject the practice altogether because it has been overused and abused in the past.	Even aged management, including clearcutting, would be used where appropriate. There would be no formal policy favoring even aged or uneven aged management. Scenic values would be considered in harvest design.	Timber harvests would be designed to more closely simulate the effects of natural disturbances. This could include some clearcutting; but even aged management techniques would generally be modified to retain some snags and live trees. Scenic values would be considered in harvest design.	Even aged management would be used only where it would enhance biodiversity and was consistent with the landscape level biodiversity plan. Clearcutting would be avoided. Scenic values would be considered in harvest design.	Even aged management, including some clearcutting, would be used. There would be no formal policy favoring even aged or uneven aged management.	Even aged management, including some clearcutting, would be used. There would be no formal policy favoring even aged or uneven aged management.	Clearcutting would be used on sites where it was compatible with wildlife needs. Clearcuts would generally be used to create small openings for big game forage. Clearcutting would also be used to accomplish silvicultural objectives on tracts that had little recreational value. Scenic values would be considered in harvest design.	Timber harvests would be designed to more closely simulate the effects of natural disturbances. This could include some clearcutting; but even-age management techniques would generally be modified to retain some snags and live trees. Scenic values would be considered in harvest design. Mitigations may be applied as long as they did not result in significant loss of trust revenue.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
10) ECOSYSTEM INTEGRITY There is public concern regarding the impacts of timber harvests on overall ecosystem health. Some people believe that traditional timber harvests alter the function of forest ecosystems, decrease biological diversity and reduces future forests productivity. They believe protection of old-growth forests and maintenance of natural forest characteristics should be a priority. Others believe that old-growth forests are biologically unhealthy and individual dead or dying trees should be harvested to use the resource before it is wasted.	Some practices undertaken to maintain long-term site productivity and stand health may also promote biodiversity; however, we would not normally engage in practices with the expressed purpose of promoting biodiversity. Retention of old-growth would be addressed on a case-by-case basis where it is an issue.	We would promote biodiversity by favoring diversity of stand structures and patterns. We would use landscape evaluations to identify opportunities for meeting this objective while also generating sustained levels of trust revenue. We would attempt cooperation with other land owners through ecosystem management plans that promoted biodiversity across landscapes. Old-growth would be maintained or restored in at least half the amounts that would be expected to occur on state lands under natural processes in similar forest types.	Forested state lands would be managed to maintain and restore natural ecological characteristics. Activities would be guided by landscape-level biodiversity plans. We would attempt cooperation with other land owners through ecosystem management plans that promoted biodiversity across landscapes. We would try to maintain or restore old-growth in amounts similar to those believed to occur as a result of natural processes.	Some practices undertaken to maintain long-term site productivity and stand health may also promote biodiversity; however, we would not normally engage in practices with the expressed purpose of promoting biodiversity. Old-growth would not be protected, except where the trust was compensated, or where necessary to address site-specific issues.	Some practices undertaken to maintain long-term site productivity and stand health may also promote biodiversity; however, we would not normally engage in practices with the expressed purpose of promoting biodiversity. Old-growth would not be protected, except where the trust was compensated, or where necessary to address site-specific issues.	We may engage in practices designed to promote biodiversity in order to support income opportunities related to wildlife and recreation. Old-growth would be maintained or restored in at least half the amounts that would be expected to occur on state lands under natural processes in similar forest types.	We would promote biodiversity by favoring diversity of stand structures and patterns. We would use landscape evaluations to identify opportunities for meeting this objective while also generating sustained levels of trust revenue. We would attempt cooperation with other land owners through ecosystem management plans that promoted biodiversity across landscapes We would seek to maintain or restore old-growth forest in amounts of at least half the average proportion that would be expected to occur with natural processes on similar sites. We would maintain sufficient replacement old-growth to meet this goal given that old-growth does not live forever.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
11) TRUST MGMT POLICY Public opinion and understanding of DNRC's trust mandate varies. Some people believe the trust mandate should be strictly interpreted and environmental protection measures beyond what are legally required should not interfere with trust revenue production. They believe the environment can be adequately protected with minimal impact on trust revenue while also contributing jobs and a tax base to the economy. Others believe that environmental protection must come before trust income. They think DNRC should reduce timber harvests to compensate for activities of other landowners and past harvest practices.	We would accept the traditional belief that the best way to produce long- term trust income is to manage lands for timber production while meeting DNRC standards for environmental protection. Timber would be our primary income source. We would consider outside proposals for other income-producing uses, but we would rarely initiate such projects. We would favor low or non-income producing uses to the degree that they were compatible with timber management. Decisions on short- or long- term values and future land uses would be made on a case-by-case basis. We would view our obligation to local economies as providing a steady timber supply while maintaining aesthetic, recreational and environmental quality.	We would assume that the best way to produce long-term income for the trust would be to manage intensively for healthy and biologically diverse forests. This would provide for sustained income from both timber and a variety of other potential uses. It would also help maintain stable trust income in the face of uncertainty regarding future resource values. Land use decisions would promote diversity as a means to enhance long-term income through projects that also yielded short-term income. We would view our obligation to local economies as maintaining a healthy, diverse forest that yielded a steady stream of timber and other marketable outputs, and also maintaining aesthetic, recreation, and environmental quality.	We would assume that wildland values would be much higher in the future than they are now, so the best way to produce long-term income is to defer uses that prohibit the forest ecosystem from evolving naturally. The value of undisturbed natural forest environments would be so great that the short-term income loss would be less than the long-term gain. We would emphasize modest levels of low impact uses to generate short-term income while managing for long-term ecosystem maintenance. Our obligation to local economies would be seen as one of providing long-term stability, a pleasant living environment and a wide range of future options.	We would assume the best way to produce long-term income for the trust would be to allow market conditions to drive management of state forest lands. We would inventory our resources and actively market the best combination of income producing uses. Relying on a diversified mix of resources to produce income would allow DNRC to take advantage of market conditions and changing resource values. Decisions on short- and long-term values and future land uses would be made on an economic basis with an emphasis on income production. Our obligation to local economies would be viewed as one of providing maximum long-term income to the trust for the support of schools.	We would assume that the best way to produce long term trust income would be to manage lands for timber production while meeting Department standards for environmental protection. We would actively market timber as our primary income-producing activity. We would consider proposals for other uses, and accommodate low- or non-income-producing uses when they were compatible with timber management. Decisions on short- or long-term values and future land uses would be made on a case-by-case basis, with emphasis on long-term timber values. We would view our obligation to local economies as one of providing a steady timber supply to local processing facilities.	The best way to produce long-term income for the trust would be to manage state forest lands primarily for wildlife and recreational values. Income-generating activities that utilized wildlife and recreational resources would be actively marketed. Timber management activities would supplement trust income when compatible with our recreational and wildlife management goals. Decision on long- and short-term values and future land uses would be made on a case-by-case basis, with emphasis on long-term recreation and wildlife values. Our obligation to local economies would be viewed as one of providing aesthetic, recreational and wildlife values in a manner that produced trust revenue for the support of local schools.	The best way to produce long-term income for the trust would be to manage intensively for healthy and biologically diverse forests. Healthy and biologically diverse forests would provide for sustained income from both timber and a variety of other potential uses. It would also help maintain stable trust income in the face of uncertainty regarding future resource values. We would pursue non-timber commercial uses as guided by changing markets for new and traditional uses. Where we pursue non-timber uses, we may not comply with the biodiversity elements of this alternative. However, because we expect these uses to occur on a minor amount of forest acreage, they would not compromise the overall premise of managing for biodiversity.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
12) PUBLIC INVOLVEMENT AND PLANNING MEPA and other laws require DNRC to solicit public input in planning and management activities. Some people believe that a sincere and aggressive public involvement effort would prevent domination by special interest and political pressures. Others believe that the public needs to be effectively informed about DNRC activities and management goals. However, excessive public involvement may lead to unwise or political decisions that are contrary to DNRC's management goals and trust responsibilities.	Public participation efforts would conform to current MEPA rules. The degree of public involvement would be project-specific and vary by public interest and uncertainty of, or potential for, significant impacts. Proposed projects would be modified to address public concerns to the extent consistent with our trust obligations. Site-specific management decisions would be made at the most local level possible.	Public participation efforts would conform to current MEPA rules. The degree of public involvement would be project-specific and vary by public interest and uncertainty of, or potential for, significant impacts. Proposed projects would be modified to address public concerns to the extent consistent with our trust obligations. Site-specific management decisions would be made at the most local level possible.	Public participation efforts would conform to current MEPA rules. The degree of public involvement would be project-specific and vary by public interest and uncertainty of, or potential for, significant impacts. Proposed projects would be modified to address public concerns to the extent consistent with our trust obligations. Site-specific management decisions would be made at the most local level possible.	Public participation efforts would conform to current MEPA rules. The degree of public involvement would be project-specific and vary by public interest and uncertainty of, or potential for, significant impacts. Proposed projects would be modified to address public concerns to the extent consistent with our trust obligations. Site-specific management decisions would be made at the most local level possible.	Public participation efforts would conform to current MEPA rules. The degree of public involvement would be project-specific and vary by public interest and uncertainty of, or potential for, significant impacts. Proposed projects would be modified to address public concerns to the extent consistent with our trust obligations. Site-specific management decisions would be made at the most local level possible.	Public participation efforts would conform to current MEPA rules. The degree of public involvement would be project-specific and vary by public interest and uncertainty of, or potential for, significant impacts. Proposed projects would be modified to address public concerns to the extent consistent with our trust obligations. Site-specific management decisions would be made at the most local level possible.	Public participation efforts would conform to current MEPA rules. The degree of public involvement would be project-specific and vary by public interest and uncertainty of, or potential for, significant impacts. Proposed projects would be modified to address public concerns to the extent consistent with our trust obligations. Site-specific management decisions would be made at the most local level possible.

ISSUE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
13) RECREATIONAL OPPORTUNITIES There is broad public interest in maintaining a variety of recreational opportunities on state land. Some people advocate a form of user fee for recreation in addition to hunting and fishing on state land. Others believe that non-consumptive recreational uses should be free. There are opinions that recreational uses could generate substantial income to the trust if those values were marketed. Some people believe that forest practices may render state lands less desirable for recreational opportunities, and criteria should be developed to determine valuable recreational sites.	General recreational use (see definition under Public's Right to Use State Lands) would be allowed on legally accessible lands with the purchase of a Recreational Use License (RUL). Cabinsites would continue to be leased. New cabinsite development would be minimal and only as workload allowed. Outside proposals to develop recreational sites would be considered but would receive a relatively low priority.	General recreational use would be allowed on legally accessible lands with the purchase of a RUL. We would develop recreation uses compatible with maintenance of healthy ecosystems. Cabinsites would continue to be leased and new ones developed where appropriate. We would develop recreation sites if they were compatible with maintenance of a healthy ecosystem.	General recreational use would be allowed on legally accessible lands with the purchase of a RUL. We would promote minimum impact recreation developments that augmented use of the natural ecosystem. Low impact dispersed, recreational uses would be encouraged. Highly-developed recreation sites, such as ski areas, would be discouraged except in areas already unsuitable for restoration of natural conditions. Existing cabinsites would be leased; however, new cabinsite development would only be considered in areas already unsuitable for restoration of natural conditions.	General recreational use would be allowed on most legally accessible lands with the purchase of a RUL. However, some high valued sites could be offered for exclusive hunting, fishing, or other recreational leases. We would propose to increase the uses requiring a RUL and propose that the fees reflect market value. We would actively promote and develop recreational uses on state lands where those uses could generate income to the trust. Some lands would be managed primarily for recreational use where that income potential is greatest. Cabinsites would continue to be leased and new ones developed where appropriate.	General recreational use would be allowed on legally accessible lands with the purchase of a RUL. Cabinsites would continue to be leased. New cabinsite development would be minimal and only as workload allowed. Outside proposals to develop recreational sites would be considered but would receive a relatively low priority.	Income generating recreation and wildlife management would be the primary focus of DNRC's forest land management program. State lands with wildlife and recreational income potential would be reclassified and managed for that use. General recreational use (see definition under Public's Right to Use State Lands) would be allowed on many state lands. However, some high valued sites could be offered for exclusive hunting, fishing, or other recreation leases. Cabinsites would continue to be leased and new ones developed where appropriate.	General recreation use would be allowed on legally accessible lands with the purchase of a RUL. Cabinsites would continue to be leased and new ones developed where appropriate. We would develop recreational opportunities as guided by changing markets for new and traditional uses. These lands may not comply with the biodiversity elements of this alternative. However, because we expect these other income opportunities to occur on a minor amount of forest acreage, these uses would not compromise the overall fundamental premise of managing for biodiversity.

SCENARIOS

In order to develop our assessment of the projected environmental effects of each alternative, we created hypothetical scenarios for timber harvest, grazing levels, recreational use, and road density. These scenarios were developed for the purpose of providing some tangible basis for our resource and economics effects assessments. They are not accomplishment targets. They are simply estimates of probable ranges of activity, given the management philosophy we would adopt under each alternative. Tables II-T1, II-G1, II-R1 and II-RD1 show the estimates of harvest levels, grazing levels, exclusive recreational lease percentages, and road densities that we developed prior to our effects analysis. Appendix SCN details our development of these scenarios. More information on the development of our recreation use estimates is also found in Appendix ECN.

Table II-T1
ESTIMATED RANGE OF TIMBER HARVEST LEVELS FOR EFFECTS ASSESSMENT PURPOSES[1] (MMBF)

	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
HIGH	40	35	10	45	55	20	50
LOW	20	15	5	15	35	10	30

Table II-G1
ESTIMATED LEASED/LICENSED AUMS FOR EFFECTS ASSESSMENT PURPOSES[2]

ALTERNATIVE	AUMS ON FORESTED GRAZING LAND	AUMS ON CLASSIFIED FOREST LAND	TOTAL
ALPHA	10,822	15,594	26,766
BETA	10,822	10,370	21,192
GAMMA	10,822	7,977	18,799
DELTA	8,658	9,752	18,230
EPSILON	10,822	11,168	21,990
ZETA	8,658	9,752	18,230
OMEGA	10,822	10,370	21,192

[1] An explanation of the development of our timber scenarios can be found in Appendix SCN.

[2] An explanation of the development of our grazing scenarios can be found in Appendix SCN.

Table II-R1
ESTIMATED PERCENTAGE OF STATE FOREST ACRES OFFERED FOR DISPERSED LEASING FOR EFFECTS ASSESSMENT PURPOSES[3]

ALTERNATIVE	PERCENT	REASONING
ALPHA	10	Based on current levels and alternative philosophy.
BETA	15	Slightly higher priority placed on recreation uses compatible with healthy ecosystems.
GAMMA	20	Promotion of low-impact dispersed recreation use.
DELTA	30	Active promotion of high-value opportunities which may include dispersed recreation.
EPSILON	10	Low priority. Must not interfere with timber management.
ZETA	70	Active promotion of high-value wildlife and recreation opportunities.
OMEGA	15	Development of recreation opportunities as guided by changing markets for new and traditional uses.

[3] An explanation of the development of our recreation scenarios can be found in Appendix SCN and in Appendix ECN .

Table II-RD1
ESTIMATED ROAD DENSITIES FOR EFFECTS ASSESSMENT PURPOSES[4]
YEAR 2020

	NWLO		SWLO		CLO		SLO, ELO, NELO		TOTAL	
	TOTAL	OPEN	TOTAL	OPEN	TOTAL	OPEN	TOTAL	OPEN	TOTAL	OPEN
EXISTING	2.7	1.4	2.4	0.6	1.1	0.2	1.1	0.2	2.0	0.8
ALPHA										
High	4.1	2.1	3.6	0.9	1.5	0.2	1.8	0.4	3.0	1.2
Low	3.4	1.7	3.0	0.8	1.3	0.2	1.4	0.3	2.5	1.0
BETA										
High	3.7	1.4	3.3	0.6	1.3	0.1	1.6	0.2	2.8	0.8
Low	3.1	1.2	2.7	0.5	1.2	0.1	1.3	0.2	2.3	0.7
GAMMA										
High	2.9	0.9	2.6	0.4	1.2	0.1	1.2	0.1	2.1	0.5
Low	2.8	0.8	2.4	0.4	1.1	0.1	1.2	0.1	2.0	0.5
DELTA										
High	4.4	2.2	3.8	1.0	1.5	0.2	1.8	0.4	3.2	1.3
Low	3.2	1.6	2.8	0.7	1.2	0.2	1.4	0.3	2.4	1.0
EPSILON										
High	4.6	2.3	4.0	1.0	1.6	0.2	2.0	0.4	3.3	1.3
Low	3.9	2.0	3.4	0.9	1.4	0.2	1.7	0.3	2.9	1.1
ZETA										
High	3.3	1.2	3.1	0.6	1.3	0.1	1.3	0.2	2.5	0.7
Low	3.0	1.1	2.6	0.5	1.2	0.1	1.3	0.2	2.2	0.7
OMEGA										
High	4.0	1.6	3.6	0.7	1.5	0.2	1.7	0.3	2.9	0.9
Low	3.5	1.4	3.0	0.6	1.3	0.2	1.5	0.2	2.6	0.8

[4] An explanation of the development of our road density scenario can be found in Appendix SCN.

STRUCTURE OF OUR ANALYSIS

We divided our analysis topically into two categories. The first category, Physical and Biological Environment, includes forest soils, watershed, air quality, vegetation, wildlife, fisheries, historical and archaeological sites, and the visual environment. The second category, Financial and Administrative Environment, includes the administrative organization and economic contributions of DNRC's Trust Land Management Division.

The first part of our analysis, presented in Chapter III, examines the existing environment and describes its current condition. In Chapter IV, we predict the effects of each alternative by estimating impacts on two or more descriptors that we used to measure changes expected to result from the proposed management activities. Each resource analysis has its own descriptors. For example, some of the descriptors used in the vegetation analysis include forest type, stand age, and old-growth amounts, while descriptors for the fisheries analysis included stream temperature, large organic debris, and sediment levels.

ENVIRONMENTAL CONSEQUENCES: CONCLUSIONS OF ANALYSIS

The conclusions of our final environmental impact statement are too complex to be completely summarized here. We can state some of the general results of the analysis for each alternative, however. This summary will focus on three factors in the analysis: (1) the predicted impact of the alternative on forest health, defined as the trend toward historic conditions in forest types, stocking levels, old-growth features, and patch characteristics; (2) its likely impact on other elements of the biological and physical environment; and (3) the Net Present Monetary Value (NPV) of each alternative as we calculated it.

Together, these three factors, forest health, environmental effects, and net present value, describe the predicted effects of each alternative in a way that balances the two parts of the trust mandate: to provide ongoing funds to the common schools, and to care for the trust resource over the long term.

EFFECTS OF ALPHA

Alpha is not predicted to have a net beneficial impact on any component of the physical and biological environment, including forest health. Its projected NPV is the fourth highest, following Epsilon, Omega and Delta.

EFFECTS OF BETA

We predict Beta would have a net beneficial effect on forest health, but only at the high end of its harvest level scenario. There will be fewer negative impacts on other biological and physical resources under Beta than under Alpha, Delta, Epsilon or Omega, but more than under Gamma and Zeta. Projected NPV is ranked fifth, following Epsilon, Omega, Delta, and Alpha.

EFFECTS OF GAMMA

We expect Gamma to offer beneficial conditions for all biological and physical resources except forest vegetation. Its low harvest levels, combined with continued wildfire suppression, would create conditions that could cause forest health to decline further from historical conditions. Gamma has the lowest NPV of any alternative.

EFFECTS OF DELTA

Delta is expected to have the third highest NPV, following Epsilon and Omega. We also

predict it would have a somewhat beneficial impact on forest health, depending on harvest levels and the mix of activities under this market-driven alternative. It also has the potential for more adverse impacts on other biological and physical elements than any alternative but Epsilon, again depending on the management program that develops.

EFFECTS OF EPSILON

Epsilon offers the highest NPV of any alternative. It also has the potential to have a net beneficial effect on forest health. It is likely to have some degree of adverse impact on the other biological and physical components.

EFFECTS OF ZETA

Our analysis indicates that Zeta would have little positive effect on forest health, if any. Its impact on other biological/physical components would depend to some extent on their value for recreation and wildlife activities; some would benefit, others would not. Its NPV is the second lowest.

EFFECTS OF OMEGA

Our analysis indicates that Omega would have the second highest NPV, following closely behind Epsilon. Indications are that it has the potential to be the most beneficial alternative for forest health. The expected impact of Omega on other biological and physical resources is less than Alpha, Delta and Epsilon but greater than Beta, Gamma and Zeta.

PREFERRED ALTERNATIVE

Since the release of the DEIS and the development of the Omega alternative, we have identified a preferred alternative based on the following selection criteria:

1) monetary return to the school trust;
2) long term health of our forest resource; and
3) effect on the biological and physical environment.

It was the general opinion of the planning team that two of the alternatives, Gamma and Zeta, are seriously deficient according to one or more of the criteria above.[5] The remaining five alternatives, Alpha, Beta, Delta, Epsilon, and Omega, do satisfy all of the criteria to varying degrees. This is demonstrated in the effects assessment presented in Chapter IV. Of the remaining five, Omega is preferred.

In terms of the selection criteria, Omega is predicted to provide the second highest NPV of all of the alternatives. This prediction is based on the harvest level scenarios with which we conducted our effects assessment. The actual harvest levels will be determined through the sustainable yield study commissioned by § 77-5-221--223 MCA (HB 201 1995). That study will use the management philosophy and RMS of the final alternative to determine what will be our legislatively mandated sustainable harvest.

In addition, Omega allows flexibility for the pursuit of income opportunities other than timber when their revenue potential meets or exceeds that of long-term timber potential. This will allow us to respond to changing markets for new and traditional uses and products, again meeting our trust mandate.

We believe that Omega will provide an opportunity to meet our trust mandate, while also contributing to the health and diversity of state forest lands. The biodiversity management philosophy of Omega, similar to

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[5] Public comment on the DEIS asked us to provide more information on why Gamma and Zeta were not preferred alternatives. See page RSP-112 for that information.

those philosophies used nationwide by other state and federal agencies, will allow us to manage the proportion and distribution of forest types and structures that were historically present on the landscape. As a result, we will be able to provide for the long-term health of the forest by reducing risks of catastrophic fires, and insect or disease attacks.

Omega will have a mid-range impact on biological and physical resources, when compared to the other alternatives. However, we believe that the Resource Management Standards developed for Omega will provide sufficient mitigation measures (and in some cases, such as SMZs and BMPs, proactive management to prevent impacts) to protect Montana's resources.

On balance, when we evaluated how each of the alternatives met the selection criteria, we judged that Omega best met the combination of the three selection criteria.

SUMMARY OF ENVIRONMENTAL EFFECTS

The following table presents a concise summary of the environmental, administrative, and economic consequences we would expect with implementation of each alternative. This table can not be fully understood by itself; it is simply a quick way to provide a general idea how the alternatives compare on various important points. The assumptions, analysis procedures, and discussions leading to this brief summary are presented in Chapter IV of this Final Environmental Impact Statement.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
FOREST SOILS							
Availability of Soil Nutrients	Maintain 80%	Maintain 90%	Maintain 90%	Maintain 80%	Maintain 80%	Maintain 90%	Maintain 90%
Accelerated erosion/slope stability	slight increase	slight decrease	decrease	slight increase	increase	decrease	slight increase
Soil compaction and displacement	Keep impacts to less than 20% of site	Keep impacts to less than 15% of site	Keep impacts to less than 15% of site	Keep impacts to less than 20% of site	Keep impacts to less than 20% of site	Keep impacts to less than 15% of site	Keep impacts to less than 15% of site
WATERSHED							
Impact Ranking: Low Number = Less Adverse Impact							
Sediment and Nutrient Loading Risk[6]	7	3	1	4/5	6	2	4/5

6 Lower number means a lower overall risk of sediment and nutrient loading impacts. This ranking is a function of timber harvest level, percent clearcut, road density, grazing, and recreation as explained on in the Watershed Methodology section of Chapter IV.

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
AIR QUALITY							
Particulate from Wildfires: (Deviation from Current Level)	Slight Increase to Slight Decrease	Slight Increase to Slight Decrease	Increase	Slight Increase to Slight Decrease	Slight Increase to Slight Decrease	Slight Increase	Slight Increase to Slight Decrease
Particulate from Prescribed Burning: (Hi-Lo range, % of 1982-91 avg.)	60-120%	45-105%	15-30%	45-135%	105-165%	30-60%	90-150%

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA

FOREST VEGETATION

Symbols indicate predicted change from present levels:
+ Increase
- Decrease
= Little Change
Multiple + and - Larger magnitude changes.
+/-, =/+, =/- Predicted Changes Vary Depending on Harvest Levels or Other Factors.

Stand Size Classes							
Nonstocked:	+/-	+/-	-	+/-	+/-	-	+/-
Seed/sap:	+	+/-	-	+/-	+	+/-	+/-
Poletimber:	--	--	--	--	--	--	--
Sawtimber:	+	+	++	=/+	=	++	+
Stand Age Distribution							
Young:	+	+/-	-	=/+	++	+/-	+/-
Immature:	--	--	--	--	--	--	--
Mature:	++	++	++	++	++	++	++
Older:	+	++	+++	+	+/-	++	+
Forest Types: (Net Shift Toward Earlier- vs. Later-Successional Species.)	Either direction, depending on harvest level and ecological group.	Either direction, depending on harvest level.	Later-successional.	Either direction, depending on harvest level.	Earlier-successional.	Later succes-sional.	Earlier-successional.

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
FOREST VEGETATION (continued)							
Stocking Levels: (Overall Trend)	+	+/-	++	+/-	+/-	+	+/-
Old-growth Net Change:	+/-	=/+	+	+/-	-	+	=/+
Potential for Long-Term Replacement:	Low/Moderate	Moderate/High	Low	Low/Moderate	Moderate	Low/Moderate	Moderate/High
Snag Abundance							
Small Snags:	=/+	+/-	+	=/+	-	+	-
Large Snags:	=/-	=/+	+	=/-	-	+	+
Patch Characteristics-- Level of Variation Between							
Small Patches:	-	+	-	-	-	+/-	+
Med. Patches:	+	+/-	-	+/-	+	-	-
Large Patches:	-	+/-	+/-	+/-	-	+/-	+

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
FOREST VEGETATION (continued)							
Cumulative Effects (Forest Health) Trend Toward (+) or Away From (-) Historic Conditions in							
Forest Types:	+/-	+/-	-	+/-	+	-	+
Stocking:	-	+/-	-	+/-	+/-	-	+/-
Old-Growth Features:	-	=/+	+	=/-	-	+	=/+
Patch Characteristics:	--	=/+	-	--	--	=/-	=/+

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
PLANT SPECIES OF SPECIAL CONCERN							
Mechanical Disturbances: Level of Impact (Low Number = Less Impact)	4	3	1	6	7	2	5
Exotic Species Infringement: Risk of Spread	moderate - high	low - moderate	low	moderate	high	low - moderate	low - moderate
Grazing Levels (Low Number = Less Grazing)	6	4/5	1	3	5	2	4/5
Risk of Loss or Decline: Rank Order (Low Number = Less Risk)	6	3	1	5	7	2	4

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
NOXIOUS WEEDS							
Area of Disturbance Associated with Land Management Activities (Low Number = Less Disturbance)	5	4	1	3	7	2	6
Priority of Weed Control	low - moderate	high	high	low - moderate	low	moderate - high	moderate - high
Risk of Spread: Rank Order (Low Number = Less Risk)	6	3	1	5	7	2	4

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
WILDLIFE *							
Number of Species Expected to be Positively Affected (or Likely to be Positively Affected) by Changes in Successional Stages:	29	28	34	29	24	34	24
Forest Type:	18	19 (2)	11 (3)	18	3	12	4
Stocking Level:	12	12	12	0 (12)	0 (27)	12	0 (12)
Snag Abundance:	52	28	80	51	0	79	28
Woody Debris:	0	63	68	0	0	68	0
Riparian Condition							
W. of Divide:	0	275	275	275	275	275	275
E. of Divide:	0	0	0	0	0	0	0
Recreation Use:	0	10	10	0	0	5	10
Road Density:	0	25	200	67	0	67	29

* The data presented in these two wildlife tables provides a general comparison of impacts by alternative. This information is not intended to be interpreted alone, but with the narrative presented in Chapter IV, Wildlife Cumulative Effects and the Appendix WLD.

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
WILDLIFE (continued) *							
Number of Species Expected to be Adversely Affected (or Likely to be Adversely Affected) by Changes in Successional Stages:	5	5	37	5	5	21	5
Forest Type:	28	28 (2)	34	27 (2)	30 (8)	34	10
Stocking Levels:	31	27 (1)	31	0 (1)	0 (14)	31	0 (20)
Snag Numbers:	28	0	0	28	79	0	52
Woody Debris:	0	0	0	0	68	0	0
Riparian Condition							
W. of Divide:	275	0	0	0	0	0	0
E. of Divide:	295	295	295	295	295	295	275
Recreation Use:	33	23	23	33	33	26	23
Road Density:	200	0 (248)	0	137	200	2	55 (116)

* The data presented in these two wildlife tables provides a general comparison of impacts by alternative. This information is not intended to be interpreted alone, but with the narrative presented in Chapter IV, Wildlife Cumulative Effects and the Appendix WLD.

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
FISHERIES							
Impact Rating: Low Number = Less Adverse Impact							
Sediment and Nutrient Loading	9.0	5.8	1.6	7.0	10.6	3.4	7.4
Large Organic Debris	5.4	3.8	1.2	7.8	7.8	3.2	4.2
Water Tempera-ture	3.1	2.2	0.6	3.1	3.8	1.6	2.4
Total Rating	17.5	11.8	3.4	17.9	22.2	8.2	14.0

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA

ADMINISTRATIVE ORGANIZATION

Change in FTE (Current = 77.36)

Overall	+10.5	+15.5	-22.5	+15.5	+22.0	-2.5	+30.5
By Program:							
Forest Product Sales	No Change	No Change	-25.0	No Change	+8.0	-18.0	+12.0
State Lands Administration	+4.5	+5.5	+2.5	+6.0	+2.5	+8.0	+5.5
Forest Improvement	+1.5	+3.5	-10.0	No Change	+5.5	No Change	+4.5
Inventory	+1.5	+1.5	No Change	+1.5	+3.0	+1.5	+3.5
Resource Management	+3.0	+5.0	+10.0	+8.0	+3.0	+6.0	+5.0

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA
ECONOMICS							
Approx. Share of Total School Funding: (%)	3.5	3.2	0.9	4.3	4.9	2.1	4.6
Net Present Value (High-Low Average in $1,000)							
Baseline Prices	71,550	57,576	8,073	74,929	114,829	35,080	100,952
Highest Prices	90,644	73,540	13,801	94,023	143,313	44,783	126,306
NPV Plus Remaining Timber Asset Value (High-Low Average in $1,000)							
Baseline Prices	377,414	377,997	379,443	380,793	377,022	384,615	377,702
Highest Prices	521,865	525,284	536,656	525,244	512,964	537,573	516,480

CONSEQUENCE	ALPHA	BETA	GAMMA	DELTA	EPSILON	ZETA	OMEGA

ECONOMICS (continued)

Share of State Totals							
Jobs Supported: (High-Low Average %)	0.36	0.38	0.16	0.38	0.48	0.26	0.45
Incomes Generated: (High-Low Average %)	0.39	0.33	0.11	0.40	0.57	0.22	0.51

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